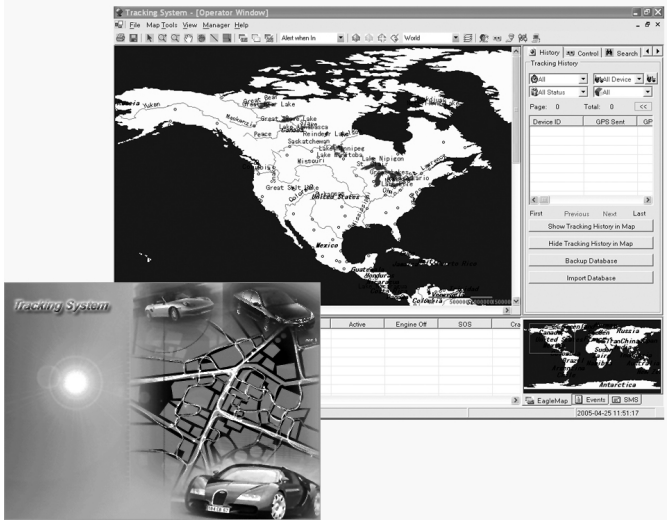
STAR NETWORK
TECHNOLOGY LIMITED



TSWS 1.4
Tracking System Work Station

---------- **Installation and User Manual** ----------

Proprietary Notice and Disclaimer

Unless otherwise noted, this document and the information herein disclosed are proprietary to Star Network Technology Limited (SNT). Any person or entity to whom this document is furnished or who otherwise has possession thereof, by acceptance agrees that it will not be copied or reproduced in whole or in part, or used in any manner except to meet the purposes for which it was delivered.
The information in this document is subject to change without notice, and should not be construed as a commitment by SNT. Although SNT will make every effort to inform users of substantive errors, SNT disclaims all liability for any loss or damage resulting from the use of this document or software described herein, including without limitation contingent, special, or incidental liability.

Copyright © 2006 Star Network Technology Limited

License Agreement

Read this agreement before opening the software. Once you have removed the software from its envelope or downloaded from the SuperGuard website you have accepted the agreement.

USAGE RIGHTS

Your rights, with respect to the Software, are non-exclusive. The software may only be used by one user, on one computer at a time. The software may be transferred to another computer, as long as it is only used by one user at a time. The Software and its documentation may not be copied or distributed to others. You may not create, modify, alter, adapt, merge, decompile, or reverse-engineer the Software, and you may not remove or obscure SuperGuard logos or other included copyright or trademark notices.

COPYRIGHTS

The Software accompanying this manual is protected by copyright laws of the United States and Hong Kong (SAR). The Software documentation is copyrighted. You may only copy the Software and the Software documentation for backup or to load the Software onto your computer as part of program execution.

TITLE TO SOFTWARE AND CONFIDENTIALITY

The Software and all copies thereof are proprietary to SNT and title thereto remains in SNT All applicable rights to patents, copyrights, trademarks and trade secrets in the Software are and shall remain in SNT. You may not sell, transfer, publish, or otherwise make available any software or copies thereof to others. You acknowledge that the Software is a trade secret of SNT. You agree to secure and protect each program, software product and copies thereof in a manner consistent with the maintenance of SNT' s rights therein and to take appropriate action by instruction or agreement within your organization to satisfy your obligations hereunder. Violation of these provisions shall be a basis for immediate termination of this license. Termination of the license shall be in addition to and not in lieu of any other legal or equitable remedies available to SNT.

SOFTWARE LIMITED WARRANTY

ALL SOFTWARE FROM SNT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
SNT does not warrant that the functions contained in the Software will meet all your requirements or that the operation of the Software will be uninterrupted or error-free. However, SNT warrants the CD-ROM on which the Software is furnished to be free from defects under normal use for a period of ninety (90) days from the date of delivery as evidenced by a copy of your paid invoice or sales receipt. If the CD-ROM fails due to neglect, accident, or abuse, SNT shall not be liable to replace the CD-ROM under this Limited Warranty. SNT's entire liability and your exclusive remedy for a diskette not meeting SNT's Limited Warranty will be the replacement of such diskette which is returned to SNT or to an authorized dealer with a copy of your paid invoice. In no event will SNT be liable for any damages, including any lost profits, or other incidental or consequential damages arising out of the use or performance of the Software, even if SNT or an authorized dealer has been advised of the possibility of such damages.

This Limited Warranty gives you specific legal rights. You may have additional rights, if you entered into an individual license agreement or maintenance program with SNT. In such cases, the rights an liability features furnished to you will exclude and exceed all terms of this Limited Warranty.

You acknowledge that you have read this Agreement and understand it, and agree to be bound by its terms, and further agree that it is the complete and exclusive statement of the Agreement, which supersedes and merges all prior proposals, understandings and other agreements, oral and written, between the parties to this Agreement. This Agreement may not be modified or altered except by a written instrument duly executed by both parties. This agreement and performance hereunder shall be governed by and construed in accordance with the laws of the Special Administrative Region of Hong Kong.

If any of the provisions, or portions thereof, of this Agreement are invalid under any applicable statute or rule of law, such invalidity shall not affect the validity of the balance of this Agreement, and such provisions or portions thereof are to the extent of their invalidity to be deemed omitted from this Agreement.

TABLE OF CONTENTS

1. Introduction 6

2. Control Base – Basic Functions 7
Application – Overview 7
Main Menus – Overview 8
Main Toolbar – Overview 9
Control Panel – Overview 10
History Panel – Overview 12
Search Panel – Overview 13
Online Panel – Overview 14
Device Status Log – Overview 14
AD Controller Panel – Overview (only for ADC models) 16
Eagle Map Window – Overview 16

3. Glossary 17

4. Installation – Preparations 18
Recommended System and Hardware Requirements 18
System Preparations 18

5. Installing the Tracking System Software 19

6. Configuring Modem Connections 22
Preparing GSM Connection 22
Preparing 56K Modem/ DTMF Connection 22
Modem Configuration 23

7. Configuring GPRS and Data Connections 27

8. Adding Maps and Map Services 28
Map Display Options 29
Configuring GIS Server Connections 31

9. Adding User Accounts to the Database 32
How to Create User Entries 32
Other Accounts Manager Features 36
How to Create Group Accounts 37

10. Initializing GPS Devices 39
Initializing Devices from the Control Base 39

11. Configuring GPS Devices 39
Setup Geo-Fence Areas for a Device 40
Setup Power Saving Modes 41
Setup GPS Storage Sequence for a Device (AVL Models) 42

12. Using the Map Tools 43
Using the POI Creator 45

13. Using the Search Functions 46
Searching for a Place or Object 46
Searching for a Near Place or Map Object 47
Finding the Shortest Path and Routing 48

14. Using the Location and Tracking Commands 50
Locating and Tracking a Device 50
Configuring a Tracking Schedule 51

15. Using the History Log and Records 53
Using the Tracking History Log 53
Maintaining the History Database 57
Using the Communication Record 58
Using the SMS Record 60
Using the Alarm Record 61

16. Accepting Events 63
Types of Events (SOS Emergency/ Geo-Fence/ Speeding/ Battery Low 63
Vehicle Security Alerts (AVL Models) 64

17. Activate/ Disable Vehicle Security 66

18. Using the SMS Editor 66

19. Configuring the Vehicle Data Collector (ADC only) 67

20. Online Software Updates and Upgrading Devices 70
Download and Installation of Software Updates 70
Sending Firmware Upgrades to Devices 71

21. Testing Devices with the Diagnostic Program 72

1. Introduction

The TSWS 1.3 Control Base software for use with GPS location and tracking devices consists of an advanced, multifunctional geographic information system with GSM and GPRS communication interface for short message commands and data exchange. It allows you to manage and remote operate all types of GPS tracking devices operating under the SuperGuard logo from a single PC desktop.

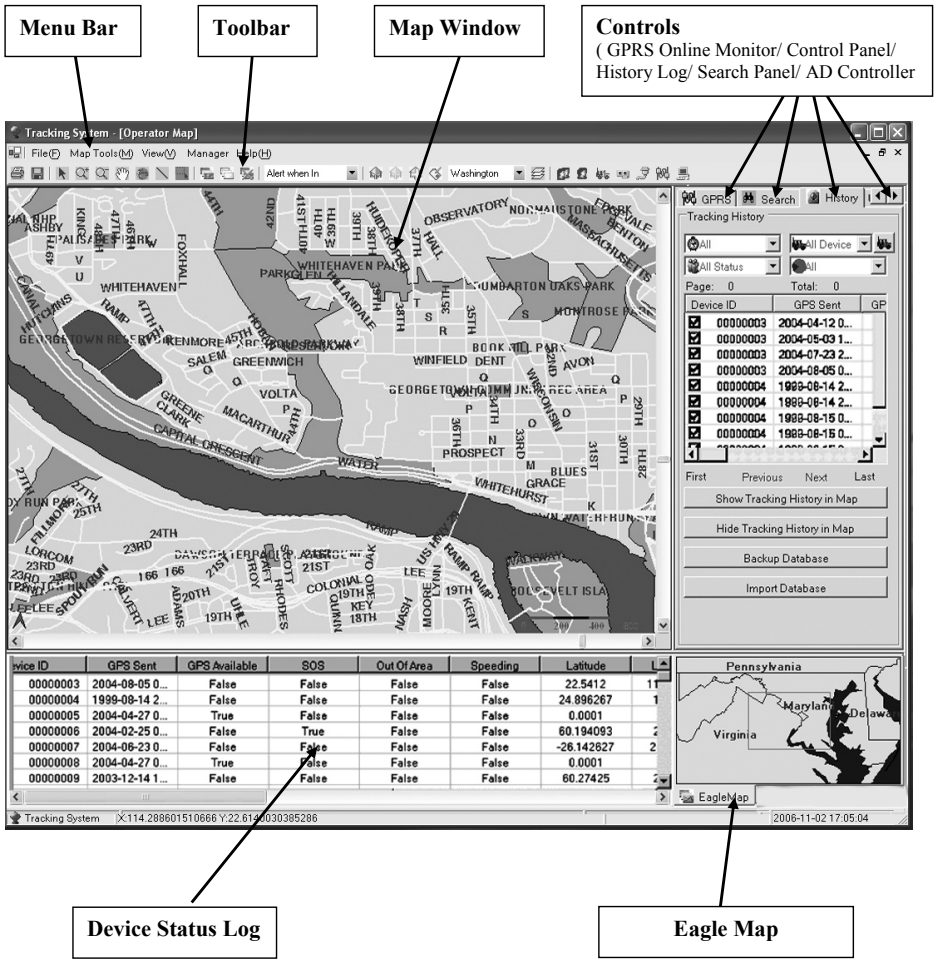
The TSWS 1.3 WorkStation software will enable you to:

- **Choose and view detailed vector maps in street level, points of interest and additional information,**
- **Zoom, pan and print map extents,**
- **Do multiple search for geographic areas, roads, points of interest and other map items,**
- **Define and find specific map items near to a location,**
- **Calculate and display the shortest or fastest route between two points,**

- **Setup new user accounts and user groups**
- **Send SMS commands and text messages,**
- **Locate, monitor and control up to 25 tracking objects in real time,**
- **Manage tracking history and user database,**
- **Setup up to four individual Geo-fence for each tracking object,**
- **Setup parameters and initialize new GPS devices wireless,**
- **Remote operate vehicle security systems,**
- **Run test program and device upgrades wireless over GPRS.**

2. Control Base – Basic Functions

Application – Overview



Main Menus – Overview

File – Print	**allows you to print the current map extent on a printer.**
File – Export	**allows you to save the current map extent to a Bitmap (.bmp) file.**
File – Exit	**lets you exit the program and end all activities.**
Map Tools – Point	**changes your mouse cursor from functional tool to default pointer.**
Map Tools – Zoom In	**lets you select an area to zoom into the map.**
Map Tools – Zoom Out	**lets you zoom out from a map area.**
Map Tools – Pan	**lets you grab and move the map.**
Map Tools – Full Extent	**lets you view the complete map.**
Map Tools – Measure Length	**opens tool to manually measure distances in map.**
Map Tools – View all Status in Area	**allows you to view the device status and information of all selected tracking objects within a specified area.**
Map Tools – Show and Draw GeoFence	**opens database to select device and lets you define Geo-fence areas.**
Map Tools – Hide GeoFence	**hides all Geo-Fences displayed in map.**
Map Tools – Remove GeoFence	**lets you remove Geo-Fences settings for selected devices.**
Map Tools – Add New Map	**lets you add a new map from the local map database.**
View – Unit Status	**lets you open or close the Device Status Log.**
View – Control Panel	**lets you open or close the Control Panel.**
View – Scale Bar	**lets you open or close a metric scale in the current map extent.**
View – Compass	**lets you open or close a North indicator.**
View – Communication Record	**lets you open a database record set with all incoming and outgoing communication details**
View – SMS Record	**lets you open a database record for all inbound and outbound SMS and SMS costs.**
View – Alarm Record	**lets you open a database record set with all alarm information**
Manager – Group Settings	**opens the group user database for searching, adding, changing or removing group entries.**
Manager – Accounts Settings	**opens the device and user account database for searching, adding, changing or removing user accounts.**
Manager – Vehicle Type Settings	**lets you enter vehicle specific data (for ADC only).**
Manager – SMS Settings	**lets you setup and choose SMS sending modes.**
Manager – Modem Settings	**lets you configure your COM ports and GSM SIM card information**
Manager – GPRS Settings	**lets you define port for GPRS socket and default communication ports for TCP/IP data exchange**
Manager – Other Settings	**lets you change Fonts and font size for map display, SMS text language, Control Panel options and third-party WorkStation connection**
Help – Online Upgrade	**connects to the Online Upgrade WorkStation to receive TSSR 3.1 updates.**
Help – About	**displays current software version and installed hardware upgrades.**

Main Toolbar – Overview

The *Print* tool allows you to print the current map or map extent on a printer.

The *Export Map* tool allows you to save the current map or map extent to a Bitmap (.bmp) file.

The *Point* tool changes your mouse cursor from functional tool to default pointer.

The *Zoom In* tool lets you select and zoom into a map area.

The *Zoom Out* tool lets you zoom out from a map extent.

The *Pan* tool lets you grab and move the map.

The *Full Map* tool lets you view the complete map.

The *Measure Length* tool lets you manually measure distances in map.

The *View All Status in Area* tool allows you to view the device status and information of all selected tracking objects within a specified area.

The *Show&Draw GeoFence* tool lets you show and define Geo-Fence areas for selected devices

The *Hide GeoFence* tool lets you hide all Geo-Fences displayed in map

The *Remove GeoFence* tool lets you remove Geo-Fences settings for selected devices.

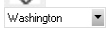
The Geo-Fence mode lets you select the options for Geo-Fence alerts: 'Alert when In' for inbound alarms, 'Out' for outbound and 'In/Out' for border crossing alarms

Show POI **lets you view all points of interest (POI) you have created and stored to your database on the map**

Hide POI **hides all POI in the map**

Add POI **lets you create and label new points of interest in the map**

Edit POI **lets you rename, move or delete POIs to a different location**



The map menu lets you select maps from the local map database

Add new Map **lets you load new maps into your map database (Note: This feature only applies for map databases working with local map engine).**

Group Settings **opens the group user database for searching, adding, changing or removing group entries.**

Accounts Settings **opens the device and user database for searching, adding, changing or removing user entries.**

Vehicle Type Settings **lets you setup a vehicle database used for speed calculations based on pulse and wheel diameters (ADC required)**

SMS Settings **lets you setup and choose SMS modes.**

Modem Settings **lets you configure your COM ports and GSM SIM card information**

GPRS Settings **lets you define port for GPRS socket and default communication ports for TCP/IP data exchange**

Other Settings **lets you change Fonts and font size for map display, SMS text language, Control Panel options and third-party WorkStation connection**

Control Panel – Overview

The Control Panel enables you to send tracking commands, configure GPS Tracking devices, activate security features and run the test diagnostic program.
The TSWS 1.4 automatically switches between different SMS Control Panels for different devices (Personal Tracker models, Vehicle Tracking devices, etc.), according to device selections made in *Accounts Settings*.

ID: **lets you select and control all GPS devices from your user database. To refresh device list, click *Refresh Unit List* button. Click the *Initialize unit* button to send user information and settings to the selected GPS unit. To initialize Geo-Fence areas you have drawn before, click Initialize Geo-Fence.**
To enter the device diagnostic program, click *Diagnostic*. Click *Upgrade Device* to transfer new firmware upgrades to the device over GPRS.

Phone: **shows the phone number from the SIM card used in the device. All SMS commands or SMS text messages will be send to this number.**

Get Location (PT2 Controller) **sends a command to the device to receive current GPS position and status information, to be displayed on the map. To get one single location from a Vehicle unit in an AVL Panel, click *Query Last Status* button instead.**

Diagnostic **starts the testing and diagnostic program to monitor GPS satellite availability, GSM signal strength and other test features.**

Track Time **lets you setup a tracking period over which you like to receive positions from a device. You can choose a time ranging from 1 minute to 45 days, using the *M* (minutes) *H* (hours) *D* (days) menus.**

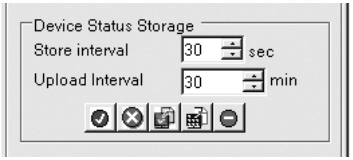
Track Interval **lets you setup the interval in which you like to receive positions from the device, over the tracking period setup in *Track Timer*. To send the Track Timer/ Interval command to the GPS unit and start tracking, click the *Start Track* button . To abort tracking before the Track Timer is up, click *Stop Track*.**

To manually start Real-Time-Tracking over GPRS (with position updates every 10 seconds), click *Start RealTime Tracking*, to end Real-Time-Tracking, click *Stop RealTime Tracking*.

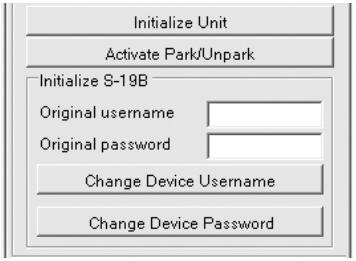
To only use GPRS for tracking location reports from device to WorkStation, click *Tracking Only by GPRS*. If you wish to use SMS fallback in case no GPRS is available, click *Tracking by GPRS/ SMS*.

Saving (PT2 Panel) **lets you configure battery saving modes for Personal Tracking devices. Choose *GPS Always On* (default) to disable shut-off timer for GPS engine. Choose *GPS Always Shutdown* to turn the GPS engine off. It will be activated only if the device is been interrogated through tracking commands or the emergency button has been pressed. To turn on the GPS engine in a specific time interval, select a *Wake up Time* between 60 seconds and 42 minutes. To initialize the device with the power saving settings, click *Initialize Saving Mode*.**

Security (AVL Panel) **lets you remote activate the Vehicle Unit's car security features. To turn on security, click *Activate*. To turn off security features, click *Disarm*.**
Click *Query Status* to receive location and information about the current status of the car security.



Device Status Storage (AVL Panel) **lets you setup a storage interval (10 sec – 42 min) in which the unit shall store GPS positions and status data to its memory. To activate data storing, click *Start Store*. To stop the unit from storing data, click *Stop Store*.**
To manually upload all data from its memory to the history database and clear the unit's memory, click *Upload Now* (GPRS required).
To setup a scheduled upload of all GPS and status data stored in the device, select an Upload Interval (min. 30min) and click *Scheduled Upload*. To stop automatic uploads from the device, click *Stop Scheduled Upload*.



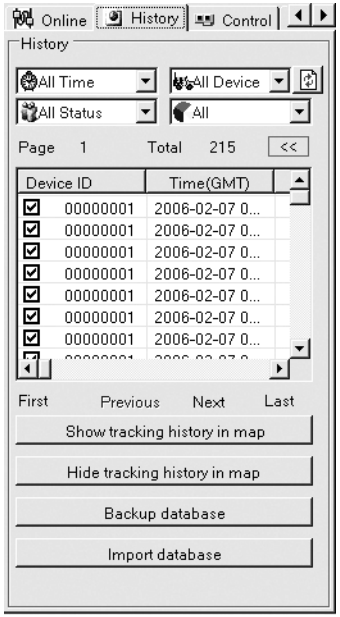
(S-19B/WebTrac-4 Panel) **Click *Initialize Unit* button to send initialization information to the device (you will need to enter correct factory Device Password and IMEI when you create the account in *Accounts Manager*).**
To activate or disable the preset Geo-Fence area around the device, click *Activate Park/Unpark* button.
If you wish to change the Device Username or Device Password, enter new information in the user account first (*Accounts Manager*). To configure the device with new user name and password, enter factory configurations into Original Username and Original Password, then send these commands using the *Change Device Username* and *Change Device Password* buttons.

Message **lets you write and send SMS text messages to a number you have entered in the *Phone:* field.**

The GSM monitoring box at the bottom of the Control Panel displays activities and short status information of connected GSM modems or terminals, indicating SMS sent and received.

History Panel – Overview

The History Panel enables you to review, search, save and retrieve positions end events received from GPS devices and stored in the history database.



From the *Tracking History Time* menu, choose a time period to view the tracking history.

From the *Device* menu, choose a Device ID or view history of *All Devices* from your database.

From the *Status* field, select if you want to view the complete history database or only the history connected to an event.

From the *Event Completed* menu, filter the events that have not been completed or accepted yet.

The History log allows you to view all positions, status and events according to the parameters you have selected in the fields above.
Click on a table row if you want to view this position and date on the map. Click at the table headers to reorganize the order of history entries. To scroll through all pages of the history database, use *First*, *Previous*, *Next* and *Last* page.

Click *Show Tracking History In Map* to select a time period and view the history track as colored line in the map window.

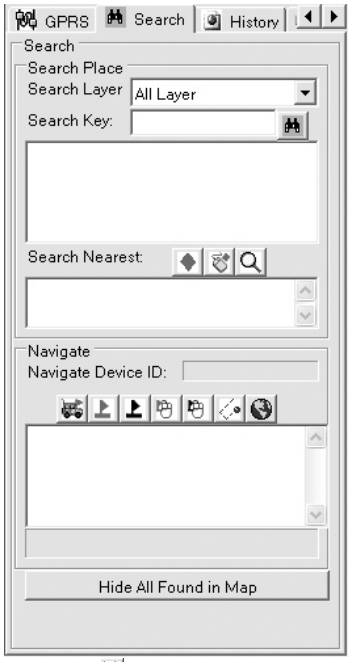
Click *Hide Tracking History in Map* to make the track line disappear from the map.

Click *Backup Database* to define a time interval in which data entries from the history log shall be saved to your database.

Click *Import Database* to load previous history files from your database.

Search Panel – Overview

The Search Panel enables you to search a map for places, street names and landmarks, find near locations and calculate the shortest route and distance between two points.



Search Layer **lets you specify the type of map objects you are searching for.**

Search Key **lets you enter the name or parts of the name of the location or object you are searching for. Click the *Start Search* button to start the search.**

The Search Results window will display the names of all objects found according to your search parameters. Choose from the list and double-click to view the item on the map.

Search Nearest **allows you to locate a place or object next to a given point or name. Click *Nearest from Search Result* to start from the Search Results window. Use *Click Start Point in Map* to manually set a start point on the map. Click *Search Nearest* to start your search.**

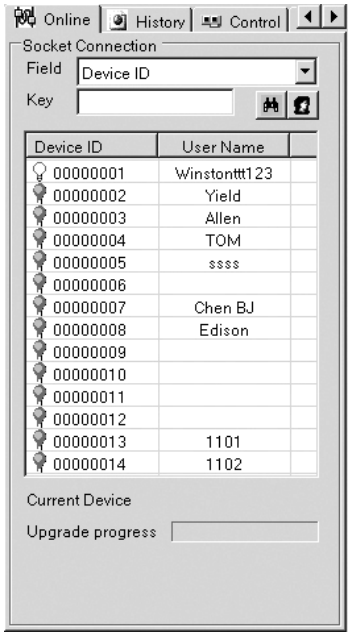
Navigate **enables you to calculate and display the shortest distance and route between two points in the map. To start navigation from the current position of a device, select the Device ID by clicking on the relevant row in the Device Status Log. Click the *Start from Device* button to mark the starting point. Click *Start from Search Result* if an object from the Search Result window shall mark the starting point. Click *End at Search Result* if the Search Result shall mark the end point of the route. Choose *Click in Map to Set Start* to manually set a starting point on the map through mouse click. Choose *Click in Map to Set End* if you want to manually set the end point on the map through mouse click. Click *Find Shortest Path* to start route calculation and receive directions. Click *Begin Navigation* to receive audio directions during Real-Time-Tracking** (currently only available for use with Asian map database).

The Shortest Path Results window will display the complete route and direction (street names)
between the two points and the distance in meters. In addition, a colored line will show the route on the map window.

To hide search results and routes in the map window, click *Hide All Found In Map*.

Online Panel – Overview

The GPRS Panel enables you to monitor TCP activities over the GPRS socket, used for communication with GPRS enabled tracking devices.



Field **helps you searching for devices from your user database according to specific parameters.**

Search **lets you enter the name or parts of the name you search for in conjunction with the parameters set above. Click the *Search User* button to start the search.**
To view all users of your database, click *Show All Users*.

All active devices that are currently online and communicating over GPRS socket, will be shown with yellow light bulbs adjacent to the Device Ids.

Grey light bulbs indicate that no GPRS connectivity is recorded.

If units are currently being upgraded with new firmware versions, the download status can be monitored at the Upgrade bar.

Device Status Log – Overview

The Device Status Log shows all current activities and events happening to the GPS devices from your database. Use the scroll bars to move through the complete table.

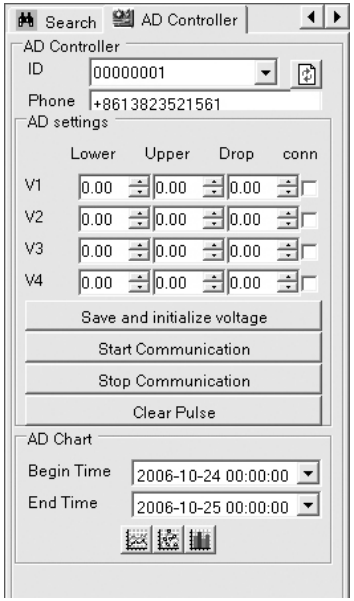
vice ID	GPS Sent	GPS Available	SOS	Out Of Area	Speeding	Latitude	L
00000003	2004-08-05 0...	False	False	False	False	22.5412	11
00000004	1999-08-14 2...	False	False	False	False	24.896267	1
00000005	2004-04-27 0...	True	False	False	False	0.0001	
00000006	2004-02-25 0...	False	True	False	False	60.194093	2
00000007	2004-06-23 0...	False	False	False	False	-26.142627	2
00000008	2004-04-27 0...	True	False	False	False	0.0001	
00000009	2003-12-14 1...	False	False	False	False	60.27425	2

The following page shows entries to the Device Status Log that will be made for every incoming data set (entries in grey are only applicable for AVL in combination with vehicle data collector):

Device ID	**Displays the device number from the user database**	*Voltage Down*	**Shows when one voltage drops unusually**
Time(GMT)	**Displays the satellite time (GMT) at the time of record**	*ADC Scanning*	**Indicates if a data collector device is connected**
GPS Available	**Shows if GPS was available to the device at the time of record**	*ADBoard Error*	**Shows if the data collector is malfunctioning**
LBS Position	**Indicates if the incoming position was received through Location Based Services**	***Latitude***	**Displays the latitude from the GPS data**
Door Lock	**Shows the status of the central door lock system**	***Longitude***	**Displays the longitude from the GPS data**
Active	**Shows the status of the car security system**	***Speed***	**Displays the actual speed (in knots) from the GPS data**
Engine Off	**Shows the status of the immobilizer function**	***Direction***	**Displays the direction from the GPS data**
ACCIn	**Shows if the Ignition is currently switched on**	***Has Event***	**Shows if an event has been recorded**
SOS	**Shows if an SOS call has been triggered**	***Completed***	**Shows if an event has been accepted by the operator**
Crash	**Shows if the vehicle has been hit or rammed**	***Version***	**Displays the actual firmware version of the device**
Door Open	**Shows if the doors have been opened in armed status**	*Pulse*	**Displays the last measured pulse count**
Battery Low	**Shows if battery power is low**	*Voltage1*	**Displays the voltage measured on Input 1**
Shock	**Shows if the vehicle is being moved in armed status**	*Voltage2*	**Displays the voltage measured on Input 2**
Out of Area	**Shows if the vehicle violated a Geo-Fence**	*Voltage3*	**Displays the voltage measured on Input 3**
Request	**Shows if the request button of the Vehicle Unit has been pressed**	*Voltage4*	**Displays the voltage measured on Input 4**
Speeding	**Shows if the maximum speed limit has been exceeded**	*Digital Input1*	**Shows if a digital input is present on 1**
Power Removed	**Shows if main power source had been cut (car battery)**	*Digital Input2*	**Shows if a digital input is present on 2**
Illegal ACC	**Shows if the ignition line has been bridged**	*Digital Input3*	**Shows if a digital input is present on 3**
Unauthorized Number	**Indicates if an unauthorized SIM number is used**	*Digital Input4*	**Shows if a digital input is present on 4**
Voltage Alarm	**Shows when a voltage irregularity is measured**		

AD Controller Panel – Overview (only for ADC models)

The AD Controller Panel enables you to define voltage minimums, maximums and voltage drop limits for every ADC vehicle data collector input, reset pulse counter and view average speed and voltage reports.



AD Settings **For each voltage input V1 (Fuel), V2, V3 and V4 you can define voltage minimum alarms (*Lower*), maximum alarms (*Upper*) and irregular voltage alarms (*Drop*). Check *conn* to activate or disable the Input line.**

Click *Save and Initialize Voltage* to send all configurations to the device.

To connect or disconnect the ADC module, click *Start Communication* or *Stop Communication*.

To reset the pulse counter to Zero, click *Clear Pulse*.

AD Chart **lets you view graphs and charts for Speed/ Odometer readings, Fuel consumption and full reports.**

Select a *Begin Time* and *End Time* for which you want to view the report and click *Speed/Odometer Chart* to view the average speed chart for the selected period.
To receive a detailed chart about the fuel consumption (V1 Input), click *Fuel Chart.*
To view all current voltage status, click *Current AD Status Chart.*

Eagle Map – Overview

The Eagle map window shows the position of the current map extent from the main map in a lower zoom level, making it easier for you to know the overall location of a current position on the main map. Use the mouse to pan and move the current map extent.

3. Glossary

Command	**Digital instruction send by an operator or user, to perform a specific function or operation.**	**Map Object**	**A point, line or shape on a digital map layer, containing a name and geographic information (e.g. countries, rivers, districts, streets, buildings, parks)**
Device Status	**A set of GPS and status information data received from a tracking device, containing GPS data (Longitude, Latitude, Velocity, Time), event and activity indicators.**	**Map Tools**	**A system of tools that allow you to view map extents, zoom in or out, or search map layers for contents.**
Geo-Fence	**A restricted, user-defined geographic area. If a GPS device leaves or enters the predefined area, an alarm is triggered.**	**Operator**	**A person or team authorized to operate and control the software and WorkStation features, administrate user accounts and incorporate additional services**
GIS	**Geographic Information System. A Geographic Information System is a combination of elements designed to store, retrieve, manipulate, and display geographic data - information about places.**	**SMS**	**(Short Message Service) Mobile phone text service, that lets operators and users send text messages and commands through GSM cellular network.**
GPS	**(Global Positioning System). A system of satellites that transmit continually, which make it possible to locate tracking objects within an accuracy of 15m through a receiving unit.**	**User**	**The customer or subscriber, using products and services provided by the operator.**
GPRS	**General Packet Radio Service: A GSM data transmission technique able to transmit data rates from 56 up to 114 Kbps. Users pay only for the volume of data sent and received.**	**Tracking Device**	**A GSM/ GPRS/ GPS enabled unit that is able to receive, store and transmit GPS data, recognize and implement commands, and perform various security and safety functions.**
GSM	**(Global System for Communication), is a globally accepted standard for digital communication, using a cellular network.**		

4. Installation - Preparations

Recommended System and Hardware Requirements

The Tracking System WorkStation is designed as a stand-alone tracking system with integrated map engine and database management.

To install the TSWS 1.3, your PC is required to meet the following minimum system requirements:

- **Pentium 4 Processor 2.00 GHz**
- **Operating System: Microsoft Windows 2000 or higher, Windows XP)**
- **RAM 512 MB**
- **Graphic Card 16 MB (or higher)**
- **Broadband Internet connection (optional for use with GPRS devices)**
- **Fixed (real) IP address (optional for use with GPRS devices); 1 free internet port (not firewalled)**
- **Free Disk Space for Control Base software: 25 MB (without maps)**
- **GSM Terminal (preferred Siemens TC 35 or higher)**
- **SMS enabled GSM SIM card**

System Preparations

If you have an earlier version of TSWS WorkStation or TSSR software:

It is recommended that you uninstall any previous version of TSWS or TSSR WorkStation software from your PC before you install a new copy.
You can choose to uninstall previous versions of the software when you run the TSWS Setup and Installation wizard. Alternately, from the Windows Start Menu, choose "*Dir:*\Program Files\Star Network\Uninstall" to run the Uninstall program. Completely remove all program files and shared files before you run a new Setup.

5. Installing the Tracking System Software

The installation of the TSWS 1.3 WorkStation on your PC will create program group items for running and operating GPS tracking and database management.

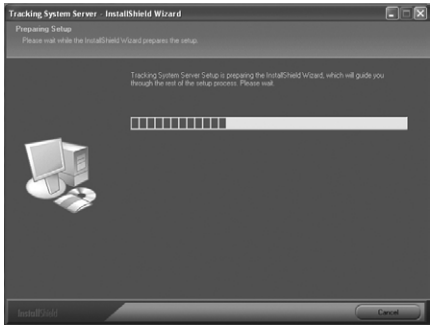
During Setup and Installation you can choose if you want to install the software in a different location or program group.

To install Tracking System WorkStation, follow these steps:

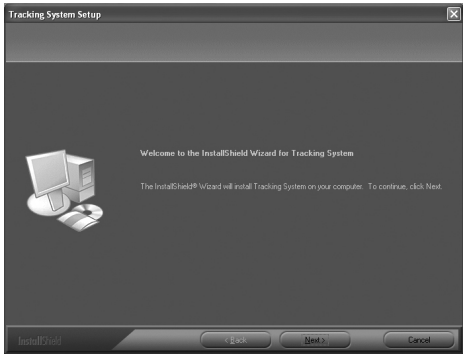
1. **Download or copy the complete "TSWS 1.3 Setup" folder to a hard drive on your PC.**

2. **Install the Tracking System WorkStation to your PC:**

- **Close all applications on your PC**
- **Locate the TSWSSetup.exe file in the "TSWS 1.3 Setup" folder. Double-click the *TSSRSetup* icon to start the installation.**
- **Follow the instructions on your screen.**
-

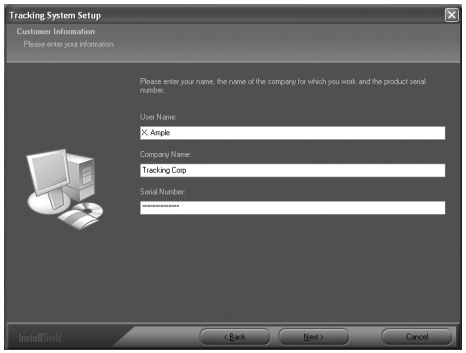

Tracking System Server - InstallShield Wizard
Preparing Setup
Please wait while the InstallShield Wizard prepares the setup.
Tracking System Server Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.
InstallShield
Cancel

3. **The InstallShield Wizard will guide you through the complete Setup process:**


Tracking System Setup
Welcome to the InstallShield Wizard for Tracking System
The InstallShield® Wizard will install Tracking System on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

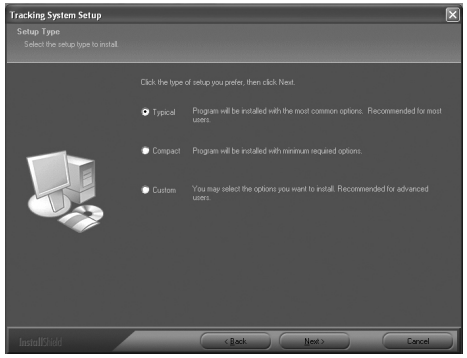
Click *Accept* and *Next* to continue when you see the dialogue boxes for *License Agreement* and *Information* text.

In the Customer Information box, enter your *User Name*, *Company Name* and *Serial Number* from the CD-ROM into the empty fields

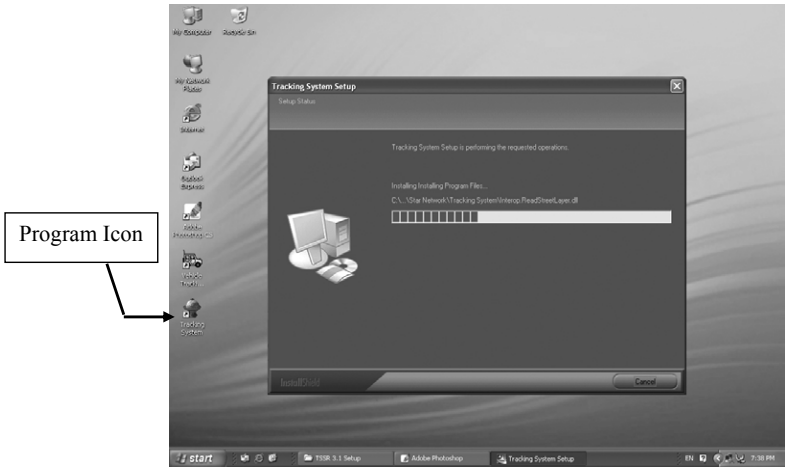


4. **In the Choose Location box, confirm the destination folder for the "Tracking System" software or click *Browse* and select another folder to install "Tracking System".**

5. **If you install the Tracking System WorkStation for the first time on your PC or WorkStation, choose *Typical Installation* and click *Next* to continue.**


Tracking System Setup
Setup Type
Select the setup type to install.
Click the type of setup you prefer, then click Next.
Typical
Program will be installed with the most common options. Recommended for most users.
Compact
Program will be installed with minimum required options.
Custom
You may select the options you want to install. Recommended for advanced users.
InstallShield
< Back
Next >
Cancel

6. **During the installation process, Setup will add program icons to the Windows Start Menu and Desktop.**



7. **If the installation was successful, the InstallShield Wizard Complete box will appear. Click *Finish* to complete the installation of Tracking System WorkStation.**

8. **If you install Tracking System WorkStation for the first time on your PC or WorkStation you may need to restart your Windows operating system to complete the installation.**

9. **To make sure that your Tracking System WorkStation software and included device firmware upgrades are up-to-date, please run the *Online Upgrade* from the *Help* Menu after you start Tracking System WorkStation for the first time. Make sure to run Online Upgrades frequently to receive newest software and firmware updates from our customer service.**

6. Configuring Modem Connections

Preparing GSM Connection

To use SMS commands and Tracking features of your Tracking System WorkStation software you will need to connect your PC WorkStation to a GSM modem or terminal.

The Tracking System WorkStation software can automatically detect and use GSM modems from various manufacturers:

- **Siemens TC 35 T (and up)**
- **Telit GM 862**

The Tracking System WorkStation software allows you to add and utilize up to 8 GSM terminals for SMS data exchange. In addition, you can also use the SMS gateway program to connect to GSM terminals located on different ports or locations.

For installation and operation of GSM modems or terminals please refer to instructions and manuals provided by the manufacturers.

When you apply SIM cards to your GSM device please make sure that the SIM card can operate without entering PIN and has unlimited SMS Data feature enabled (ask the GSM service provider to do this) before you can use it in connection with the Tracking System WorkStation software.

Ask the GSM service provider for the SMSC number (SMS service center number).
Empty the SMS storage in the GSM SIM card using operational GSM phone (please refer your GSM phone manual to do this).

If you wish to integrate SMS over IP services, please contact our customer support or service hotline to receive instructions and customized program items necessary for integration.

Preparing 56K Modem/ DTMF Connection

For some GPS Tracking models that are using Data Call or DTMF for data exchange, the Tracking System WorkStation software provides interfaces to 56K modem and DTMF decoder.

When connecting to 56K modems, make sure that your existing phone line accepts Data calls to and from cellular networks and has caller ID function.

To connect and dial to 56K modems or DTMF decoders, you will need to manually choose ports and setup the devices from the *Modem Settings* manager.

Modem Configuration

Before you can make use of the GSM features of your Tracking System WorkStation application, make sure that all software has been installed properly and the GSM terminal with SIM card is powered on and connected to the serial port of your PC WorkStation.

Start the application by double-clicking the program icon from your Windows Desktop or choose "*Tracking System*" from the Start Menu – Program Files.

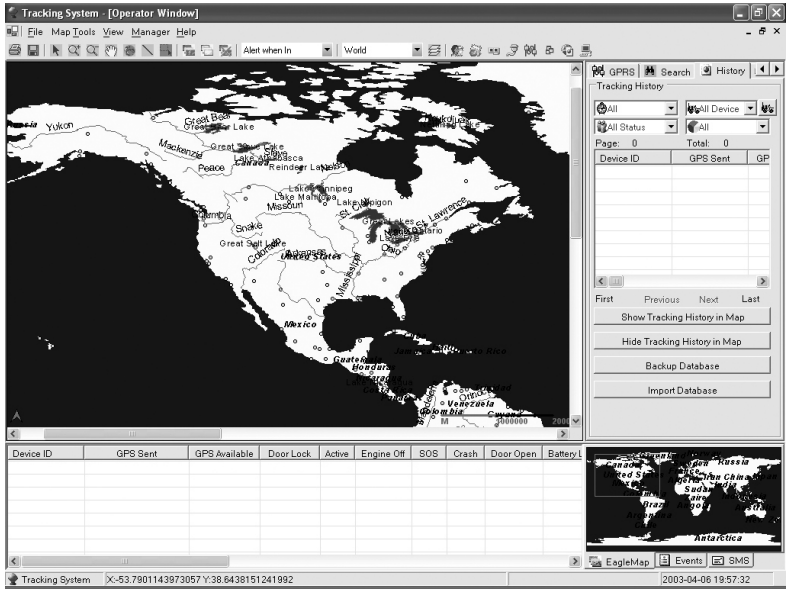
The system will automatically detect and initialize

- **The number of ports and their configuration**
- **Connected GSM devices**
- **Availability of SIM card**
- **Availability of GSM network**

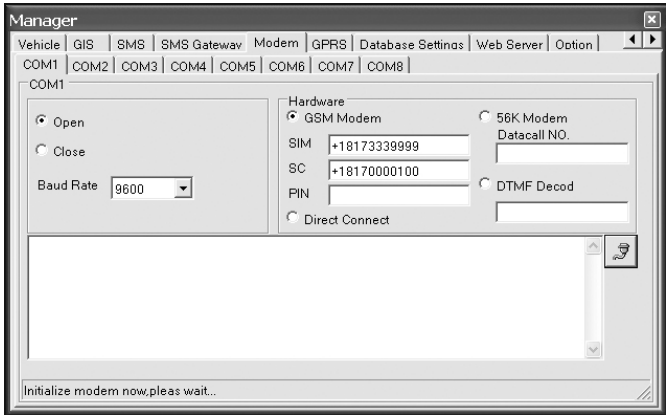
If no GSM device has been detected, all ports will be closed.

You will be able to use all GIS related features of your Tracking System WorkStation software, but not be able to send commands and connect to tracking devices.

To connect and initialize a GSM terminal later, you can use the Modem Manager from the application menu or toolbar.


Tracking System - [Operator Window]
File Map Tools View Manager Help
GPRS Search History
Tracking History
Page: 0 Total: 0
Device ID GPS Sent
First Previous Next Last
Show Tracking History in Map
Hide Tracking History in Map
Backup Database
Import Database
Device ID GPS Sent GPS Available Door Lock Active Engine Off SOS Crash Door Open
EagleMap Events SMS
Tracking System
2003-04-06 19:57:32

To setup your SIM card information and GSM number, click the *Modem Settings* button from the toolbar or open the *Modem Settings* Manager from the Menu.



The *Modem Settings* Manager allows you to connect to ports and initialize or disconnect external modems connected to your PC WorkStation.

- **To add a GSM modem manually, select the relevant COM-Port and check *Open* to open the port and establish a connection to the device**

Check *GSM Modem* from the Hardware list
In the *SIM* field, enter GSM phone number of SIM card used in the modem
In the *SC* field, enter the SMS Service Center number of the SIM card used in the modem
Enter PIN code into the PIN field if necessary to unlock SIM features
Adjust the baud rate according to modem specifications, if necessary.
Click the *Initialize* button to start and register the modem. The program will try to establish connection to the port and initialize the modem for 10 times. If connection cannot be established, the port will close automatically.
If successful, the Modem Monitoring Window will start displaying AT commands and confirm if there is a connection established.

- **Check *Close* to discontinue a connection between PC and GSM modem**
  The Modem Monitoring Window will stop displaying AT commands.

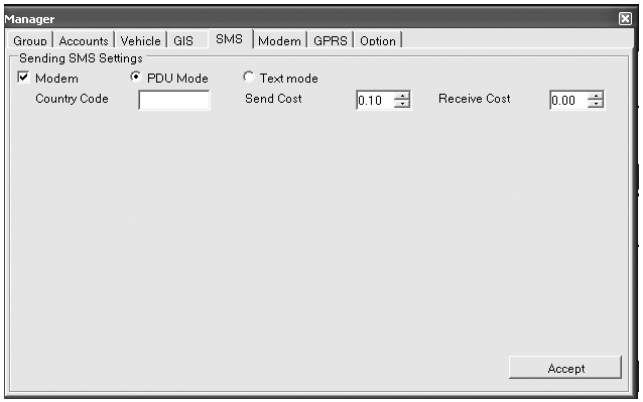
- **To add a 56K modem to receive data via Data Call (from GPS/ Data Call tracking devices), select the port used for the 56K modem and check *56Kps Modem* to configure the connection. Enter the Data call number of your connection and click the *Initialize Modem* button to dial in to the network. The Modem Monitoring Window will show if the dial-in process was successful.**

- **To add a DTMF decoder to receive data via DTMF tone (from GPS/ DTMF tracking devices), select the port used for the DTMF decoder and check *DTMF* to configure the connection. Enter the DTMF number of your connection and click the *Initialize Modem* button to register.**

- **Check *Direct Connect* if you want to connect to a GPS tracking device directly through RS232 connection. Click the *Initialize* button to configure the relevant COM port.**
  Use commands of the Control Panel to initialize or upload data from the GPS device directly.

Finish the configuration for each COM port by clicking the *Initialize* icon. In the Communicator Window you can view the system's activity and whether your initialization was successful.

To finalize settings for SMS messaging, click the *SMS Settings* button from the toolbar or open the *SMS Settings* Manager from the Menu.



If you use external GSM modem hardware connected to the Control Base WorkStation, select *Modem* and adjust settings accordingly. Choose PDU Mode, if your modem is able to send SMS messages by PDU (Protocol Description Unit) mode (default for Siemens and Telit modems). Choose Text Mode, if your modem sends messages in text mode.

***Send Cost/ Receive Cost:* allows you to define charges for each SMS send and received from the SMS terminal at the Control Base WorkStation. All SMS costs will be deducted from the credit amount entered in the User Archive, and be billed to the user account when SMS commands or alarms were sent from the Control Base WorkStation terminal on behalf of that user account.**

Click *Accept* to bring the changes into effect.

If you want to use SMS over IP services, please contact our customer service or hotline for support and receive customized integration of these services.

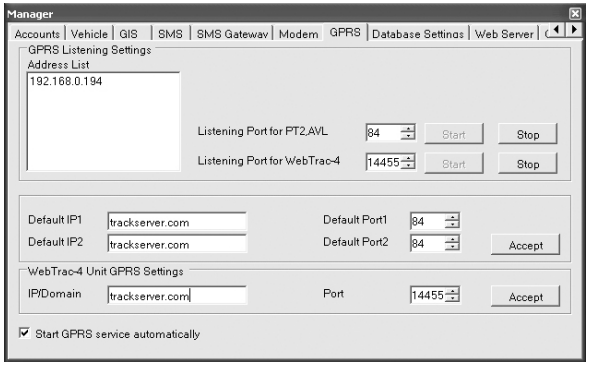
7. Configuring GPRS and Data Connections

Configuring GPRS Socket

To be able to exchange data packages between Control Base WorkStation and GPS/ GPRS Tracking devices, one Internet port has to be configured to allow communication over TCP/IP.
Before you can use this port, please make sure that it is not fire-walled and uses a static IP connection or dynamic domain name.

From the application toolbar, click *GPRS Settings* or open the *GPRS Settings* Manager from the Menu.

The GPRS Settings Manager will appear.



By default, the Computer IP Address List will list all IP connections available at your PC WorkStation. Select or enter the *Listening Port* number you want to assign to communicate with GPS/ GPRS Tracking devices.
Click *Stop* to disconnect from the GPRS Socket. Click *Start* to open the GPRS Socket port.

Before you are able receive and send data packages from GPS/ GPRS Tracking devices, all devices have to be configured with the IP address (or domain, if applicable) and port number used for data exchange with the Control Base WorkStation.
Enter the *Default IP 1* address and *Default Port 1* used for communication with the devices. For direct connections, it is usually the same IP address and Listening Port number as above. You may also enter a related domain or dynamic domain and ports here.

If available, you may enter a backup IP address and port number to let GPS/ GPRS Tracking devices connect in case the Default Port 1 gets too busy or blocked by too many incoming requests. Enter the backup WorkStation information as *Default IP 2* and *Default Port 2*. If no backup IP and port are available, enter the same IP address and Port number as in Default IP1. Click *Accept* to save Default IP configurations.

To open the GPRS socket automatically when the Tracking System WorkStation software is started, check *Start GPRS service automatically*.

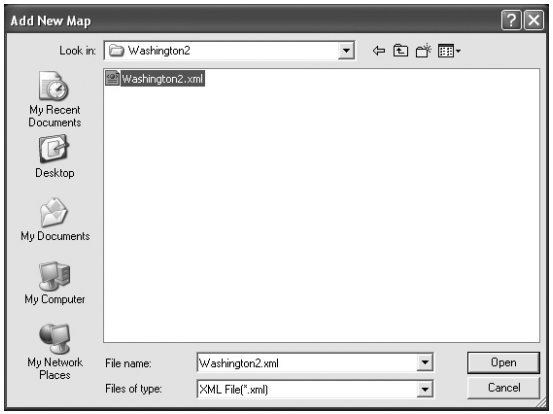
8. Adding Maps and Map Services

From your Tracking System WorkStation, you are able to load as many digital maps as you want for locating Tracking Objects on a map, search for locations and calculate routes.
Mapping performance of the local map engine will depend on map size and hardware capacities of your PC.
Please keep in mind that to run Route Planner calculations on the map engine incorporated in the Tracking System WorkStation, all map topology data has to be loaded into the RAM memory of your PC.

To add maps to WorkStation, remember the location of the map folder you want to add from your hard drive and do the following steps:

From the application toolbar, click *Add Map* or select *Add New Map* from the Map Tools Menu.

Locate the XML file from the map folder with the new map.



Double-click the XML file to load the new map into your map database.
After some seconds the new map will be displayed in the Map Window and ready to use.

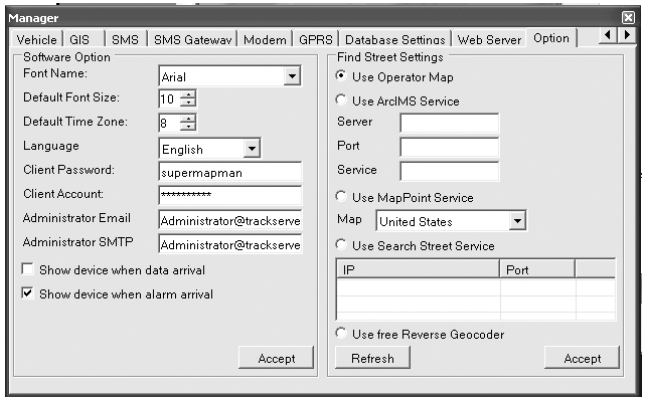
To make the Search Place and Route Calculator available online, you will have to do one first route calculation at the Control Base to load topology data into the memory of the PC.

Every time you restart the Tracking System WorkStation, you will have to repeat this step.

Map Display Options

To make viewing of street names on your operator map more comfortable, you might adjust Font names and size used for display.

From the application toolbar, click *Other Settings* or select *Other Settings* from the Manager Menu.



In the Option Manager, select *Font Name* and *Default Font Size* to display street names. You can use Zoom In or Zoom Out in the map window to see the effect of the changes.

To adjust the Time Zone for Quick Locator function (only former AVL models), choose GMT + … hrs in the *Default Time Zone* field.

To change the default language for the software GUI (Graphic User Interface), select a language from the *Language* menu.

In the *Client Password* and *Client Account* fields, you are able to reinstate software license account and password (if required).

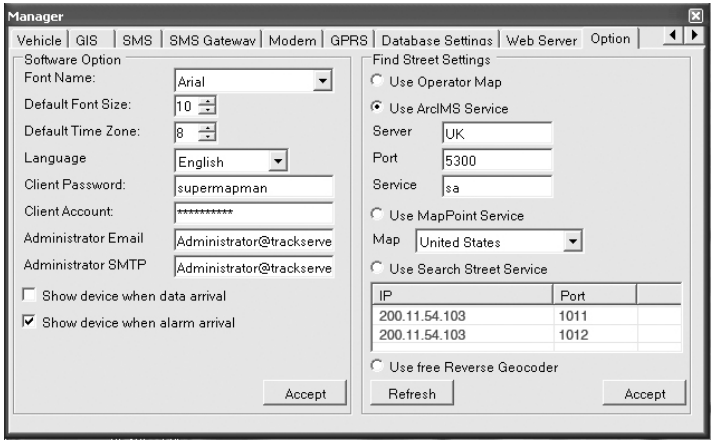
Check *Show device when data arrival*, if you wish to automatically show the position of Tracking Object displayed in the map window, every time new GPS data from a device are received at the Control Base WorkStation WorkStation (not recommended for services with high communication traffic).
Check *Show device when alarm arrival*, if you wish to automatically show the position of Tracking Object displayed in the map window, every time an alarm from a device is received at the Control Base WorkStation WorkStation.
Click *Accept* to bring the changes into effect.

Find Street Settings:

To be able to include position details and make the Search Place function and Route Calculator available at your system, you will need to choose the location of the map database which will be accessed to find street names and intersections.

Check *Use Operator Map* if you are using the local map database with Map Object based map search engine. Please note, after every time you start the TSWS, you will have to do one first route calculation at the Control Base WorkStation to load topology data into the memory of the PC WorkStation.
Every time you restart the Tracking System WorkStation, you will have to repeat this step.

If you are using ArcSDE/ ArcIMS server to manage your map database and search street features, select *Use ArcIMS Service*.
Enter ArcIMS *Server* location, *Port* number and *Service* name into the fields and click *Accept* to establish connection to the server (Please also refer to chapter "Configuring GIS Server Connections" for more information).



If you are using the web map database from Microsoft MapPoint for search street features, check *Use MapPoint Service*. Select the map to be used for finding street name information and click *Accept*. (Please also refer to chapter "Configuring GIS Server Connections" for more information).

If you are employing a wide range of country maps for search street which are managed by our Search Street Server software modules, check *Use Search Street Service* . Click *Refresh* to include any new country map added to Search Street Server.

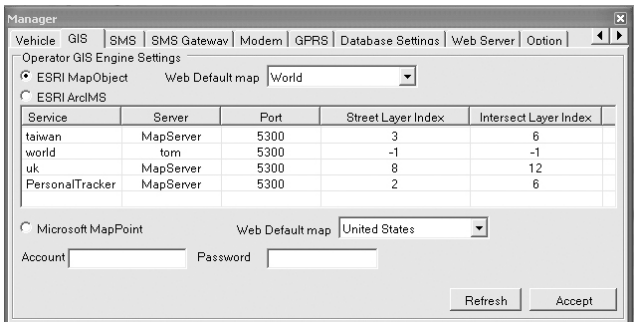
If you are using Google Map API, which does not provide street search options for position details, you may want to make use of the free Reverse Geocoder for street names and details (currently only available for United States road network).

Click *Accept* to switch the search street option to the service you want to employ.

Configuring GIS Server Connections

Open the *GIS Settings* Manager from the Menu.

The GIS Settings Manager will appear.



GIS Engine Settings:

Select the mapping engine or map service you want to use for your GIS:

Check *ESRI MapObject* if you wish to use the integrated Map Object engine for mapping features.

To define a *Default Map* to be loaded when open the TSWS program, choose from the list of maps (if applicable).

Check *ESRI ArcIMS* if you wish to use a map database managed trough ArcSDE and ArcIMS services. The IMS Map Settings window lets you view a list with locations of all connected map WorkStations that use ArcSDE/ ArcIMS services.
Click *Refresh* to receive updated map database location information from the connected ArcIMS WorkStation.

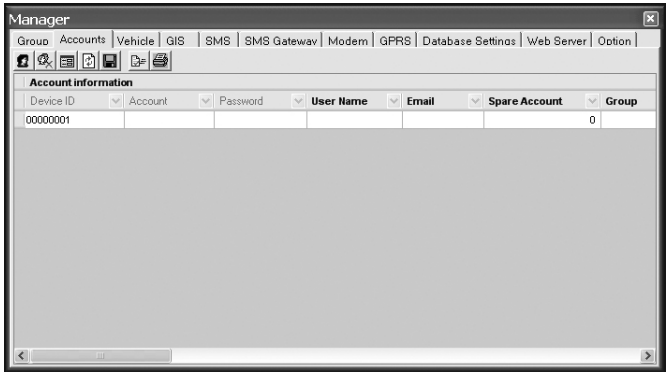
Check *Microsoft MapPoint* if you have subscribed to MS MapPoint Internet Map Service. Enter your Account name and Password to activate the service in connection with TSWS.

9. Adding User Accounts to the User Database

Before you are able to run the Tracking System WorkStation, you will need to setup at least one user account in your user database. For every GPS Tracking device you want to add to your system, you need to create one new user account.

From the application toolbar, click *Accounts Settings* or open the *Accounts* Manager from the Menu to open your user database.

The *Accounts* Manager will appear.

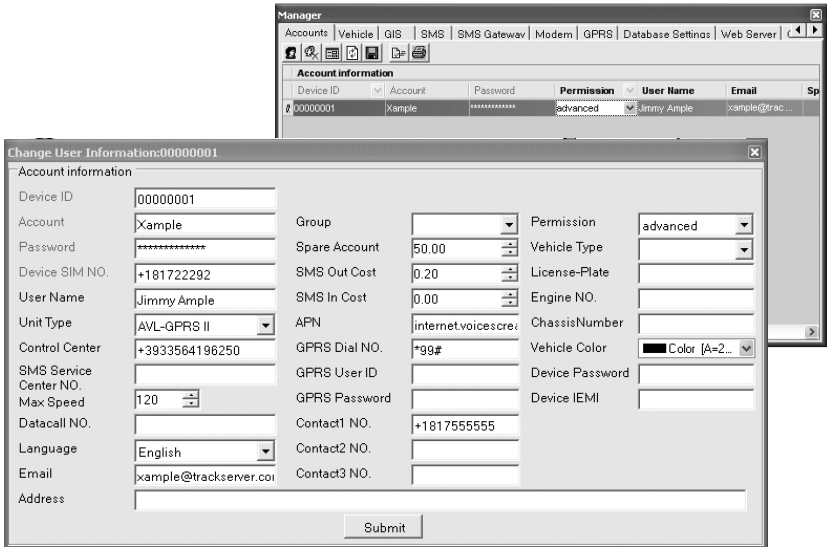


How to Create User Entries

To add a new user and device to your database, click the *Add User* button. This will open a new Device ID and user account. Fill in all account details in the correct columns or double click the bar left beside the Device ID to open the user account in a new window for convenient editing.

Enter the following data and information into the User Information Editor:

Data requirements in Red color are required to complete a new account information.



- **In the *Device ID** field, assign a 8-digit number to the GPS Tracking device you want to add to your database.**
  By default, adding a new User Entry will automatically assign a free Device ID. You may, however, type another Device ID if you wish.
  Please note that for every Device ID you can only assign one single device.

- **In the *Account** field, enter an account name, which can be used when you wish to upgrade to Web Services at a later time (required !).**

- **In the *Password* * field, enter the login password, which can be used when you wish to upgrade to Web Services at a later time (required !).**

- **In the *Device SIM NO.* * field, enter the GSM phone number of the SIM card used in the GPS Tracking Device (required !)**

- **In the *User Name* field, type the name of the owner or holder of the device. This name will appear in all SMS location and alert messages sent to the Contact persons.**
  If you are using S-19B or Webtrac-4 devices, enter your 4-digit user name here (required for S-19B and Webtrac-4).

- **From the *Unit Type* menu, select the device model you are using. This is required to be able to send with the correct command protocol.**

- **By default the *Control Center NO* field will show the GSM number of the GSM modem connected to the Control Base WorkStation or will be assigned to an SMS Gateway according to country/ area code.**

If the GPS Tracking device shall make use of another available Control Center number, you can enter accordingly.

- **In the *SMS Service CenterNO* field, you can enter the SMS Service Center number of the GSM Service Provider for the SIM card used in the GPS Tracking device (required in certain cases).**

- ***Max Speed* lets you define and setup a maximum speed limit (in km/h) for the GPS Tracking device. If the device exceeds the speed limit, alarm messages will be sent to all contact numbers (optional).**

- **In the *Datacall NO* field, enter the GSM data call number of the SIM card used in the GPS Tracking Device (required only for GPS/ Data Call Tracking Units !)**

- **Select a language for SMS text messages sent from the device or Control Base from the *Language* menu.**

- **In the *Email* field, enter the user e-mail (optional).**

- **In the *Address* field, enter the address of the user (optional).**

- **The *Group* field can be used to add the current user or device to an existing group account. Please also refer to chapter "How to Create Group Accounts".**

- **The *Spare Account:* field allows operators to enter the credit amount available to send SMS commands and SMS alarm messages from the Control Base WorkStation terminal.**

- **In *SMS Out Cost* operators can define a cost for each SMS sent to the device or to contact persons on behalf of the user account.**

- **In *SMS In Cost* operators can define a cost for each SMS (or location/ alarm etc.) received from the device.**

- **In the *APN* field, enter the Access Point Nod address required to use GPRS services with the SIM card used in the GPS Tracking device (required for GPS/ GPRS Tracking units)**

- **In the *GPRS Dial NO.* field, enter the GPRS dial number to dial up to GPRS services with the SIM card used in the GPS Tracking device (required in some cases)**

- **In the *GPRS User ID* field, enter the GPRS user name or ID for GPRS, if required to enable GPRS services with the SIM card used in the GPS Tracking device (required in some cases)**

- **In the *GPRS Password* field, enter the dial-in password for GPRS, if required to enable GPRS services with the SIM card used in the GPS Tracking device (required in some cases)**

- **In the *Contact1 NO* field, enter the phone number of the main contact person authorized to interrogate the device for locations, send commands, receive SOS emergency calls first and SMS alarm messages first-hand from the device (required to allow user control).**

- **In the *Contact2 NO* field, enter the phone number of the second contact person authorized to interrogate the device for locations, send commands and receive SMS alarm messages from the device (optional).**

- **In the *Contact3 NO* field, enter the phone number of the third contact person authorized to interrogate the device for locations, send commands and receive SMS alarm messages from the device (optional).**

- ***Vehicle Type* lets you define a vehicle model from the connected Vehicle Database (for use with ADC vehicle data collector)**

- **In the *License Plate* field, type license or reference numbers (optional)**

- **In the *Engine Number* field, enter the engine number of the vehicle in which the GPS Vehicle Tracking unit is used (optional)**

- **In the *Chassis Number* field, enter the chassis number of the vehicle in which the GPS Vehicle Tracking unit is used (optional).**

- **To select a color matching the vehicle color, double-click the *Vehicle Color* field and choose from the color palette (optional).**

- **If you are using S-19b or Webtrac-4 devices, enter the factory device password into the *Device Password* field (required for S19-B and Webtrac-4).**

- **If you are using S-19b or Webtrac-4 devices, enter the factory device IMEI into the *Device IMEI* field (required for S19-B and Webtrac-4).**

- **Click *Submit* to save the all user entry details or changes you made to the user database or click *Cancel* to leave the User Info Editor without changes.**

Other Accounts Manager Features

Click *Accounts* Manager from the toolbar or go to the Accounts Settings in the Menu to open your user database.

To add a new device/ user to your database, click the *Add New User* button. This will open a new user entry. To open an existing user account, double-click the user entry from the table.

To remove a user account from your database, search for the user from the table and click at the row once. Click the *Delete Selected User* button to remove the account.

To edit an existing user account, search for the user and double-click in the table to open the User Archive entry.

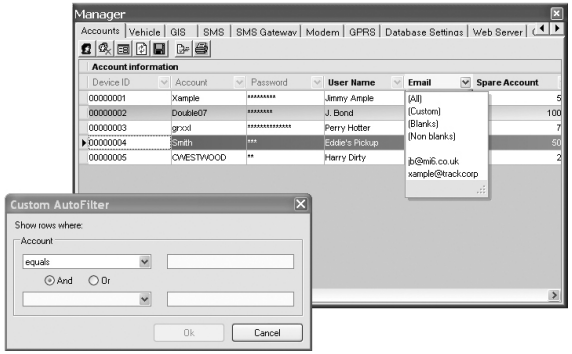
To refresh the current database with new user data arrivals, click the *Refresh* button. Click *Save* to make sure all modifications have been saved to the database before exiting the Accounts manager

To export the complete database to a HTML, XML or MS Excel file, click *Export*. To print the database on a printer, click *Print*.

If you wish to reorder the database according to alphabetical or numerical order, click at the column headers of the specific database component. Repeat clicking to switch between ascending and descending order or right-click the column header for more options.

To search the user database, click at the arrow to the right of the relevant column header. In the drop-down menu, select [*Custom*] to open the Custom AutoFilter. Enter search key in the field to the right. You may also choose between different search categories from the *Account* menu to narrow your search results. Click *Ok* to display search results or *Cancel* to return to Account manager.

At the column header, click at the arrow and select [*All*] to view the complete user database.

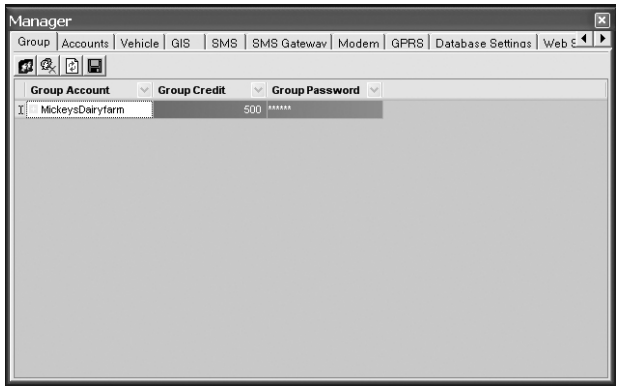


If you wish to send a command to the device account you have just edited, right-click on the bar left of the Device ID. Select *Send Command to this Unit* from the drop down menu. The Control Panel will automatically switch to the device ID you have selected, for convenient sending of commands.

How to Create Group Accounts

Operators at the Control Base WorkStation are able to create and modify group accounts, as well as adding credit limits and devices.
All SMS sent on behalf of devices from one group will be billed to the Group account.

From the application toolbar, click *Group* Manager or open *Group Settings* from the Menu to open your group database.



To add a new group to your database, click the *Add Group* button. This will open a new group account. Fill a login name and password into the Group Account fields (required for Web service upgrades at a later date) and enter a Group Credit.

To delete a group account, select by clicking at the row and click the Delete Group button.

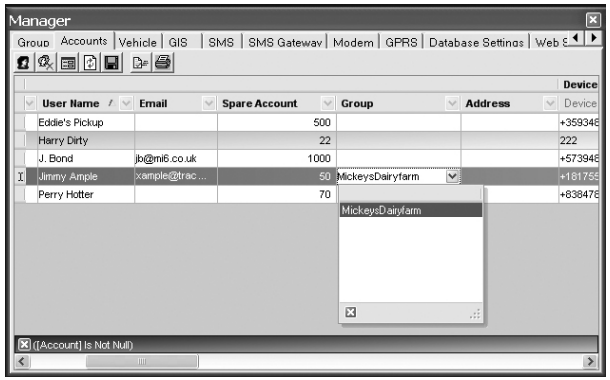
To refresh the current database with new data arrivals, click the *Refresh* button. Make sure to click *Save* to confirm that all modifications have been saved to the database before exiting the Group manager !

If you wish to reorder the database according to alphabetical or numerical order, click at the column headers of the specific database component. Repeat clicking to switch between ascending and descending order or right-click the column header for more options.

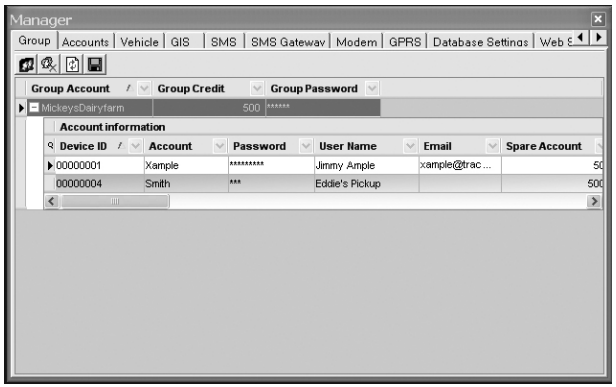
To search the user database, click at the arrow to the right of the relevant column header. In the drop-down menu, select [*Custom*] to open the Custom AutoFilter. Enter search key in the field to the right. You may also choose between different search categories from the *Account* menu to narrow your search results. Click *Ok* to display search results or *Cancel* to return to Account manager.

At the column header, click at the arrow and select [*All*] to view the complete user database.

To add users/devices to a group account, open the Accounts manager and find the column named *Group*. Click at the group field in the respective user account and select the group from the drop down list. Use the same procedure to add more devices to a group account.



Once a new devices have been added to a group account, they can be displayed by clicking the + box in the *Group Account* field of the Group manager.



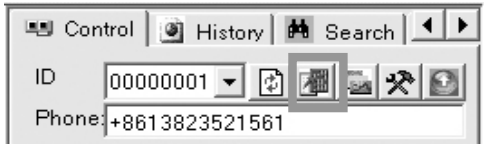
10. Initializing GPS Devices

Initializing Devices from the Control Base

To initialize a GPS Device from the Tracking System WorkStation, you will be required to have finished all necessary setup and configurations as described in the last chapters.

> ***NOTE: To initialize a GPS Device, the device must have been properly installed and set up prior to initialization through Control Base WorkStation. For initialization, GSM network with adequate signal strength for both GPS devices and GSM terminal of the Control Base WorkStation is required.***

From the Control Panel in your Tracking System software, select the Device ID of the GPS device you want to initialize.



- **The GSM phone number of the Device will appear in the *Phone:* field under the device ID.**
- **Click the *Initialize* button next to the device ID field to send and initialize user information and configurations you have entered in the User Archive to the GPS device.**

- **The GPS device will then be able to recognize and accept SMS commands you send from the Control Base WorkStation.**

- **Every time you make changes on SIM card details, GPRS dial-in information and Contact numbers or change communication ports for GPS devices at the Control Base WorkStation, you will need to reinitialize the device with the new configurations.**

After initializing all GPS devices, operators are able to locate and track them on the digital map, receive current and past GPS information, remote control various car security functions (AVL), receive alarm messages and vehicle locations in case of emergency, accidents (AVL), car theft or tow-away (AVL) for every device from your database.

11. Configuring GPS Devices

Setup Geo-Fence Areas for a Device

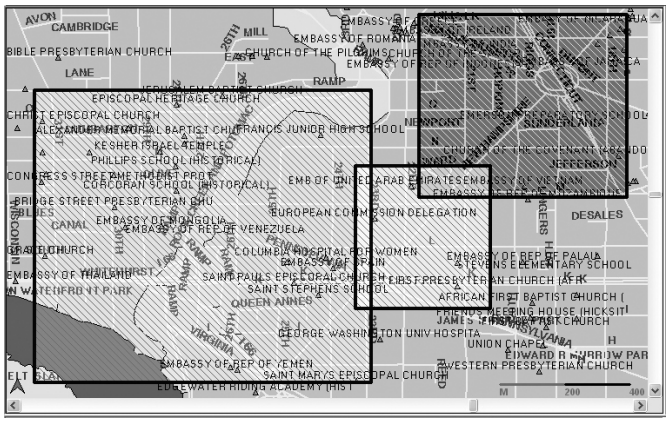
For every device, up to 4 Geo-Fence areas can be created.
Using the Geo-Fence tools from the toolbar, you are able to draw Geo-Fence boundaries in order to receive alarm messages whenever a device moves in or out of the defined area.

To setup a Geo-Fence or view all Geo-Fence areas for a device, click the *Show&Draw GeoFence* button and choose the device from the user archive that appears.

Select a Geo-Fence mode:

- **Alert when In: will cause the device to send a Geo-Fence alert when it enters a restricted area**
- **Alert when Out: will cause the device to send a Geo-Fence alert when it exits from a predefined area**
- **Alert when In/ Out: will cause the device to send a Geo-Fence alert when it crosses the border of a predefined area**

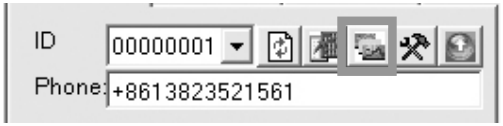
Point at the current map window. Click and hold the mouse button down and drag the cursor in the direction you want to draw the Geo-Fence area. Release the mouse button to view the rectangular area you want to setup as Geo-Fence for the tracking object.
Repeat these steps if you want to define a new Geo-Fence.



To delete all Geo-Fence areas you have drawn for a device, choose the device from the user archive and click the *Remove Geo Fence* button.

To make Geo-Fence areas disappear from the map window, click Hide GeoFence.

To finish the Geo-Fence setup and load the area information to the device, open the Control panel, select the Device ID and click *Initialize GeoFence* button to send the command per SMS to the device.

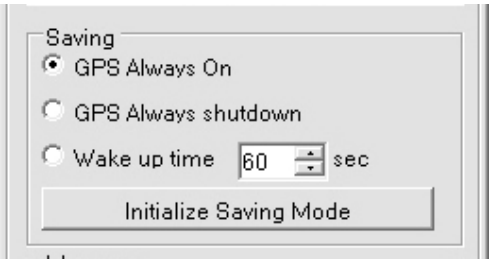


Setup Power Saving Modes (Personal Tracker Devices)

To reduce power consumption on GPS devices, you can setup sleep configurations for GPS modules used in the devices. You can setup the GPS to only start in case of alarms or tracking commands, or let it start in time intervals to store positions instead of leaving it on power for all the time.

Open the Control Panel (and select the device from the Device ID menu.

Choose from the power saving options:



***GPS Always On* (default):**
The GPS module will stay powered on all the time, scanning for GPS satellites and save positions continuously.

***GPS Always Shut Down*:**
To keep the GPS module powered off. It will only wake up if an alarm has been triggered or users send Location or Tracking commands.
Time to get positions will take longer, due to cold start of the GPS module. If no GPS is available at the location of the device, you will not be able to receive an actual position.

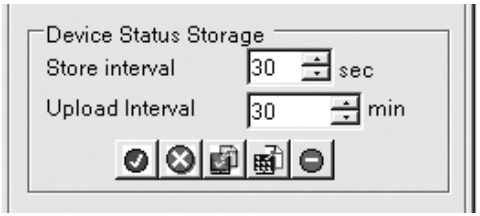
***Wake Up Time*:**
Choose a time interval between 60 seconds and 2550 seconds (42.5 min), in which you like the GPS module to power on and get GPS fix. The module will stay on for approximately 1 minute to get positions and return to sleep mode.

Click *Initialize Saving Mode* to send the setup parameters to the device.

Setup GPS Storage Sequence for a Device (AVL Models)

For all Vehicle Tracking devices that are able to store GPS data into their memory for uploading at a later time, you can setup storage intervals from your Control Base WorkStation software.

Open the Control Panel. From the *Device ID* field, select the device ID of the vehicle unit for which you want to apply the storage sequence.



Set the time interval in *Store Data every: … sec* between 60 ~ 2250 seconds. Click the *Start Store* button to setup the storage sequence the vehicle unit.

Click the *Stop Store* button if you wish to stop the vehicle unit from storing GPS information to its memory.

To let the vehicle unit upload its complete GPS data storage to the database at the Control Base WorkStation, click *Upload Now*. This command will let the vehicle unit go GPRS online. All GPS data stored in the vehicle unit's memory will be transferred to the Tracking History of the Control Base WorkStation software.

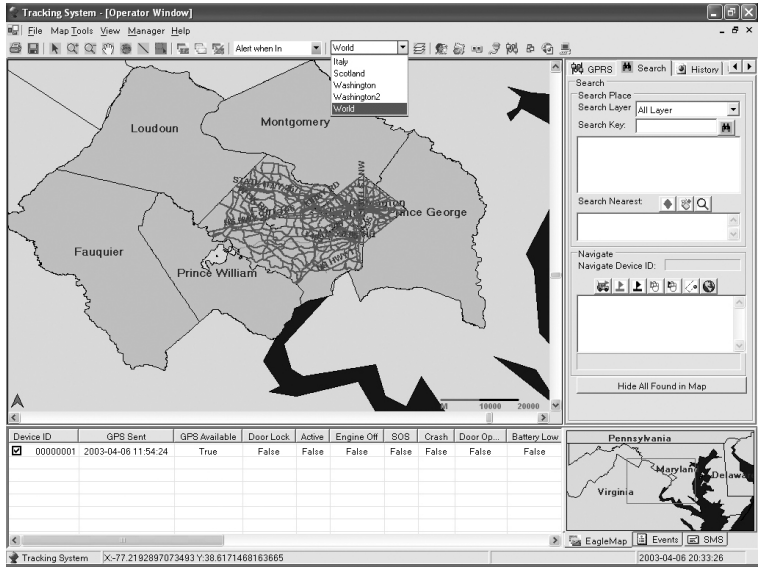
To let the vehicle unit upload its GPS data storage to the database in defined schedules, enter an Upload Interval of 30 or more minutes and click *Scheduled Upload*. This command will let the vehicle unit go GPRS online and upload data according to the Upload Interval. If the unit is not able to go online for any reason, data will remain stored and uploaded the next time.

To stop all future scheduled uploads, click the *Stop Upload* button.

12. Using the Map Tools

The Tracking System WorkStation provides operators a variety of useful map tools and functions.

To load maps from your local map database into the map window, choose from available maps in the map menu.



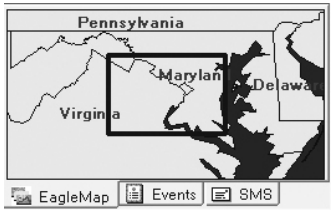
To view the entire map in the map window, click the *Full Map* button from the tool bar or go to Map Tools Menu – Full Extent.

Click the *Zoom In* tool from the toolbar or go to Map Tools Menu – Zoom In to zoom into a map extent. In the map window, hold the left mouse button down and drag to mark the area you want to zoom in. You will see a box being drawn. When you let go of the mouse button, the map will zoom in to the extent you selected.

To zoom out of a map extent, click the *Zoom Out* tool from the toolbar or go to Map Tools Menu – Zoom In. Point at the map window and click to zoom out of a map extent. Click repeatedly to zoom out to the next scales.

To grab and move a map extent, click the *Pan* tool from the toolbar or go to Map Tools Menu – Pan. Point and click at the map window. Hold the left mouse button down and drag the cursor in the direction you want to move the map extent.

To select and move a map extent from a higher zoom scale, you can use the Eagle Map screen. From the Eagle Map window, move the marked area to the position you want to place the current map extent from the main Map.
Use click and drag to move the map extent within the Map Screen.



To measure distances between two or more points in the map, use the *Measure* tool from the toolbar or go to Map Tools Menu – Measure length. Click once to set the starting point and draw a line to the next point. Click once again if you want to continue from the following point. Double-click if you want to mark the point as end point.
The measure results in meters can be viewed in the status bar below the Eagle Map window.

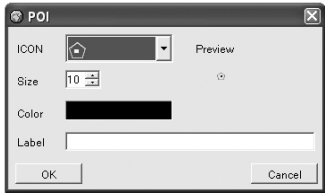
To print the current map extent, click *Print* in the toolbar or go to File Menu – Print. Follow the instructions from the printer dialogue box to print the map extent.

To save the map extent currently displayed to a Bitmap (bmp) file, click *Export Map* in the toolbar or go to File menu – Export Map. Select the destination folder and click *Save* to save the current map extent.

Using the POI Creator

The POI Creator enables you to create, label, edit and move individual points of interest saved to your database.

Click *Add POI* , then point and click in the map to add a new point of interest.



Select from the list of more than 70 icons in the *ICON* menu to display the POI. Define the size of the POI and click at the *Color* bar to open a color palette, allowing you to choose a display color for your POI.

In the *Label* field, enter a name you want to give this POI. Click *OK* to save the point and label to your database. Click *Cancel* to close the POI creator without changes.

You are able to create as many POIs as you want.

To view all POIs in the map window, click *Show POI* .
To hide all POIs in the map window, click *Hide POI* .

To edit a POI you created, click *Edit POI* . A list with all POIs from your database will appear.

To move a POI to a different location, click *Move POI* . Find the POI to be moved from the list and click at the new location in the map to move this POI.

If you like to rename or change the icon for a POI, find the POI to be modified in the list and click *Edit POI*. In the *Label* field, change the name of the POI you selected and click *OK*. Click *Cancel* to close the POI editor without changes.

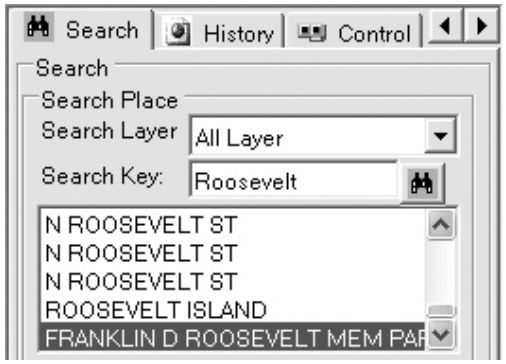
To delete a POI from your database, find the POI in the list and click *Delete POI* .

13. Using the Search Functions

The Tracking System WorkStation software allows operators to make use of various convenient and fast search operations from the map database.
You will be able to search for places and objects, find other objects next to a specified location and calculate and display shortest routes.

Searching for a Place or Map Object

From the Control Panels, select the Search Panel to access search function tools.



From the *Search Layer* menu, choose from the list of available search criteria by selecting the type of map layer you want to search for. Select *All Layers* if you want to search the complete GIS database.

The types of information may vary from map to map, depending on availability and detail level of the GIS data from the map database.

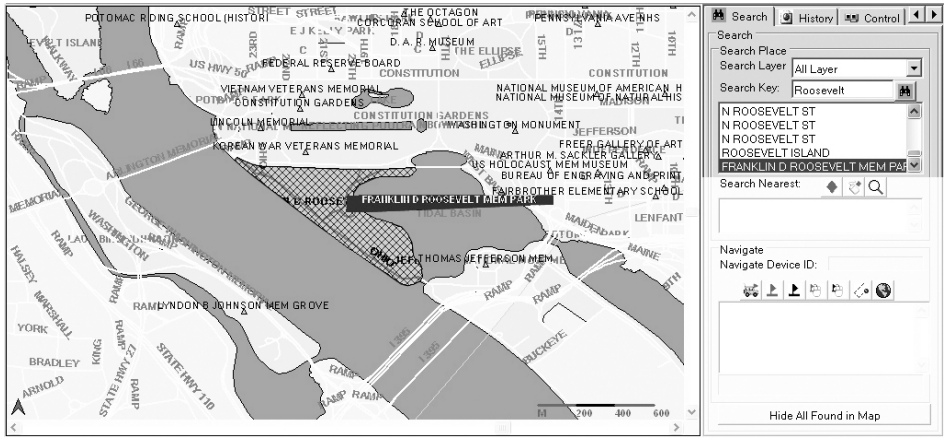
In the field *Search Key:*, enter the name or parts of the name of the search object.

The more accurate and complete the name you entered is, the faster and fewer are the search results displayed in the Search Results box.

Click the *Start Search* button to start the search.

The Search Results box will display all places or objects from the GIS database matching the search criteria and contain the name you have entered.

Select and double-click a result from the Search Results box. The map window will open the appropriate map extent and the search object will appear flagged with a callout box.



To search for other places or map objects, repeat the steps as described above. All search objects found in the map will remain flagged until you decide to remove the flags.
Click *Hide All Found in Map* to remove all flags from the map window.

Searching for a Near Place or Map Object

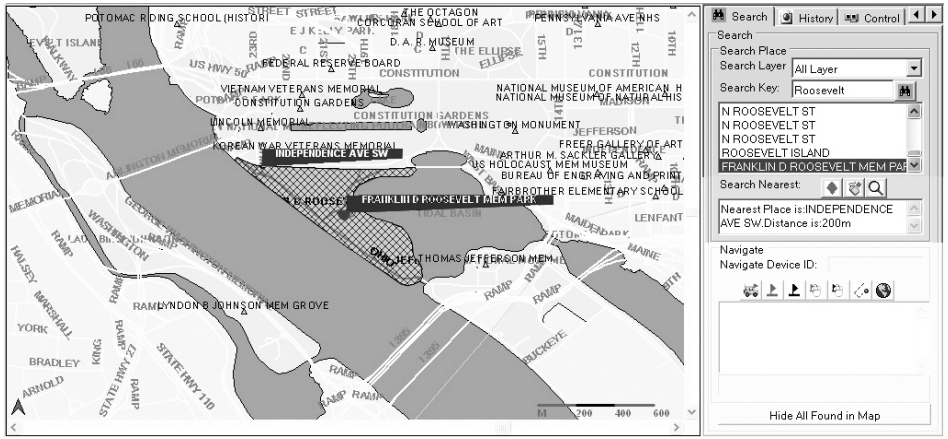
In the field *Search Layer:*, define a search criteria by selecting the type of map layer you want to search for. Select *All Layers* if you want to search the complete GIS database.

Click *Nearest from Search Results*, if you want to find a place or map object next to the result you selected from the Search Results box.

Click *Click Start Point in Map* to manually set a location in the map from which you want to search. In the Map Window, point at the location and click to set the position.

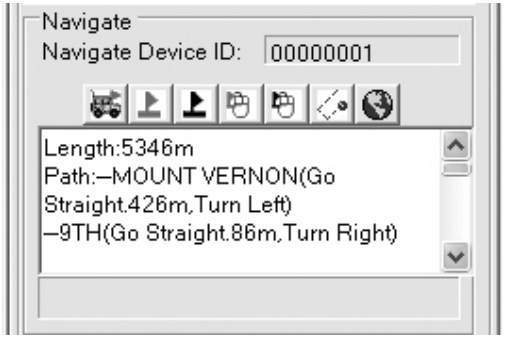
Click the *Search Nearest Object* button to start the search. The Search Results box will display all places or map objects that comply with the search criteria and contain the name you have entered.

Double-click at the matching name in the Search Results box. The map window will open the relevant map extent and the search object will appear flagged with a callout box.



Click *Clear All Found in Map* to remove all flags from the map window.

Calculating the Shortest Path and Routing



Select a device from the Device Status Log and click *Set Current Position as Start*, if you want to calculate a route starting from the current GPS position of a tracking object. The Device ID will be displayed in the Navigate Device ID field above.

Click *Start from Search Result*, if you want to calculate a route starting with a search result selected from the Search Results window.

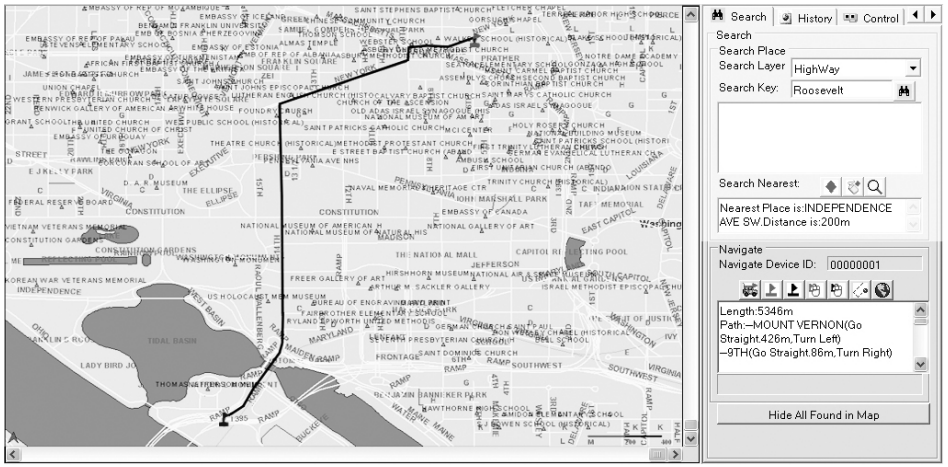
Click *End at Search Result*, if you want to calculate a route ending at a search result selected from the Search Results window.

Click *Click in Map to Set Start* to manually set a point in the map from which you want to calculate a route. In the Map Window, point at the location and click to set the start point.

Click *Click in Map to Set End* to manually set a point in the map to which you want to calculate a route. In the Map Window, point at the location and click to set the end point.

Click the *Find Shortest Path* to start the calculation. The Shortest path box will display the complete route information, containing street names and total distance in meters.

At the same time, the map window will open a map extent, showing the complete route from starting point to end point marked with a red line.



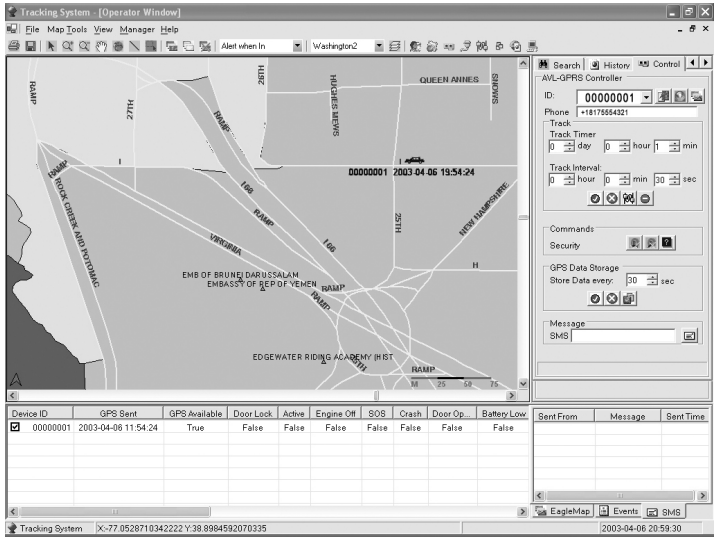
To start audio Navigation for moving tracking objects during Real Time Tracking, click *Begin Navigate*. Directions and distances to next intersections will be given acoustically according to actual GPS position (this feature is currently only available for Asian map databases).

Click *Clear All Found* in Map to remove all points and route from the map window.

14. Using the Location and Tracking Commands

Locating and Tracking a Device

To view the last known position of a tracking object on a map, search the Device ID from either the Device Status Log or History Log. Click in the table to show the selected position in the map window, including the tracking object as a colored icon along with Device ID, GPS date and time.


Tracking System - [Operator Window]
File Map Tools View Manager Help
QUEEN ANNES
00000001 2003-04-06 19:54:24
EMB OF BRUNEI DARUSSALAM
EMBASSY OF REP OF YEMEN
EDGEWATER RIDING ACADEMY (HIST
AVL-GPRS Controller
ID: 00000001
Phone: +18175554321
Track Timer
Track Interval:
Commands
Security
GPS Data Storage
Store Data every: 30 sec
Message
SMS
Device ID | GPS Sent | GPS Available | Door Lock | Active | Engine Off | SOS | Crash | Door Op... | Battery Low
00000001 | 2003-04-06 11:54:24 | True | False | False | False | False | False | False | False
Sent From | Message | Sent Time
EagleMap | Events | SMS
Tracking System
X=-77.052871034222 2 Y:38.8984592070335
2003-04-06 20:59:30

To know the current location and status of a Personal Tracking device (PT2), open the Control Panel and click *Get Location*. This will send an SMS command to the device in order to report back with GPS position and status. To view the updated location on the operator map, select device and click at the table in the Device Status Log.

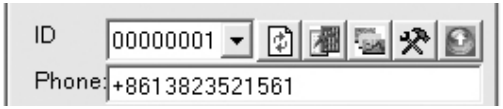
To know the current location and status of an AVL Vehicle Tracking device, open the Control Panel and click *Query Last Status*. To view the updated location on the operator map, select device and click at the table in the Device Status or History Log.

Use the Device Status log to view GPS content and status information for all devices sorted in order of Device ID number. Use the History log, if you like to view positions and status content in order of their occurrence.

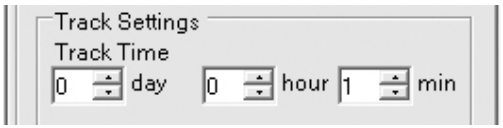
Configuring a Tracking Schedule

To setup and configure devices to report back in timed intervals, open the Control Panel.

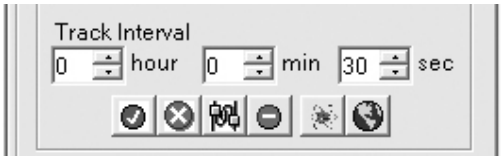
From the *Device ID* menu, select the device ID of the tracking object you want to track.



Set up a time period over which you want the device to report back. The *Track Timer* allows you to select time periods between 1 minute and 45 days (1 ~ 65535 min)



Setup an interval in which you want the device to report back over the time period set above. The *Track Interval* allows you to select time intervals between every 30 seconds to every 18 hours (30 ~ 65535 sec).



Click the *Start Track* button to start tracking the device according to the tracking parameters you set up above. The device will confirm the setup by sending one SMS with GPS position and status, and continue sending in the interval you set.

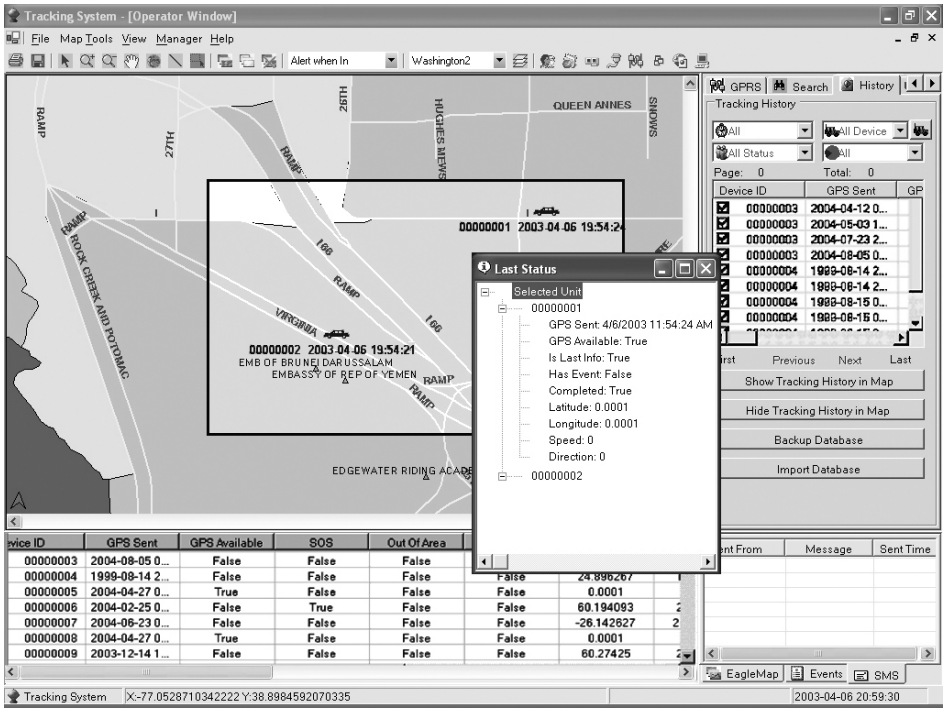
To stop the device from sending positions before the initial tracking period is up, click the *Stop Track* button. Use this button also to stop the Auto-Tracking feature when an SOS Emergency call has been triggered from GPS devices.

You are able to configure the device to send tracking updates either through GPRS only or use SMS fallback in case no GPRS is available. Click *Tracking Only by GPRS* if you wish the device to only use GPRS connection for sending data. If no GPRS is available, the device will not update its position to the Control Base WorkStation. Click *Tracking by GPRS/SMS*, if you want the device to use SMS to send its position if no GPRS is available.

To track a device in Real Time Tracking mode, click *Start Real Time Tracking*. This will send a command to the device to go GPRS online and keep sending data every time a new GPS position is available (ca. 10 seconds).

To stop tracking in Real Time Tracking mode, click *Stop Real Time Tracking*. The device will go offline and discontinue sending GPS data.

To view the last device status information of all tracking objects within a specific area, use the *View Status In Area* tool from the main toolbar above the map window. Point and draw in the map to mark an area and see all devices and status information within this area.

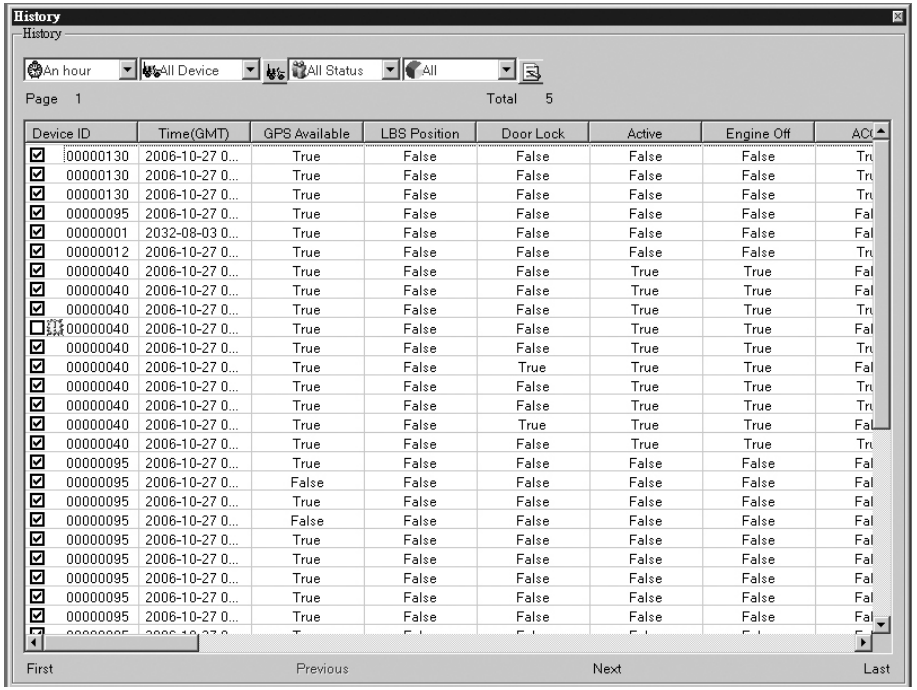


15. Using the History Log and Records

Using the Tracking History Log

Every incoming report and event from devices connected to your database will be recorded in the Tracking History log. It allows you to view and arrange tracking history entries, select multiple entries to be viewed on the map, and to view complete history tracks for individual devices over a chosen time period on the map.

Open the History Panel. The History log with all data entries and events in order of occurrence will appear. To open the History log in a new, individual window, click *Expand* .



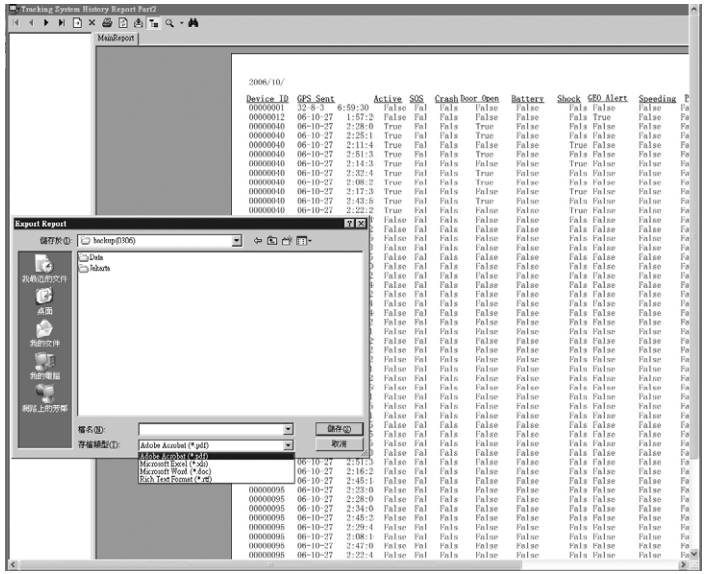
From the *Time* menu, select the time period for which you want to view entries and events from the device status database.

From the *Device ID* menu, select one device, or select *All Devices* to view the complete log for all devices from your database. Click *Refresh Device List* to update the current history list in case of new device entries.

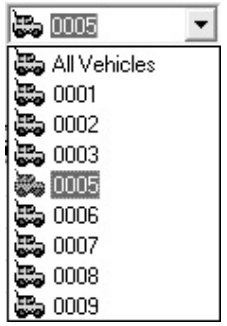
From the *Status* menu, select if you wish to view the status history for entries that have been reported as events, no-event entries or all entries from the database.

From the *Event Completed* menu, filter the database from those entries that have events accepted by operators (completed) and those entries that have not been accepted (not completed) yet.

If you wish to generate a documentary report for printing or export to different file types (pdf, xls, doc, rtf), click *Report.*



For convenient viewing of positions from latest history and recent alarms on the map, you can use the History panel.



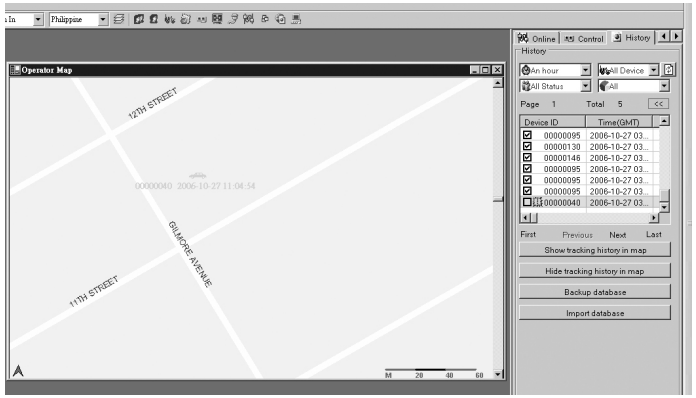
Click the headers from the status table to change the order of appearance.

For example, click the *Device ID* header to view the log in order of device IDs. Click the *GPS Sent* header to view the log in order of the time when the report was sent.

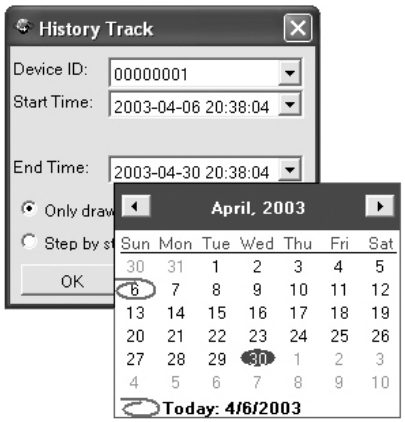
Click *First*, *Previous*, *Next* or *Last* to navigate through the pages of the history log.

Click an entry in the status table to view the last position of the tracking object on the map window.

The vehicle icon with ID and date/time will be displayed on the map in green color.



To view the history track of the selected device, click *Show Tracking History In Map* to open the Tracking History dialogue box.



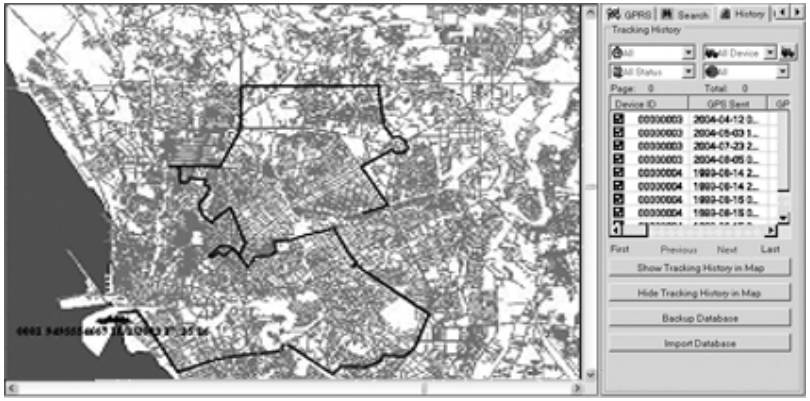
From the *Device ID* menu, select the device.

Select a *Start Time* to define which date and time shall mark the starting point of the history track. Choose a date from calendar or click at the date and time values to edit the time.

Select an *End Time*, to define which date and time shall mark the end point of the history track. Choose a date from the calendar or click at the date and time values to edit the time.

Check *Only draw a line* if you want to display the history track as a line at once. Check *Step by Step* if you want to view the history track developing step by step.

Click *OK* to display the history track. The map window will open an appropriate map extent, showing the history track as a blue line.

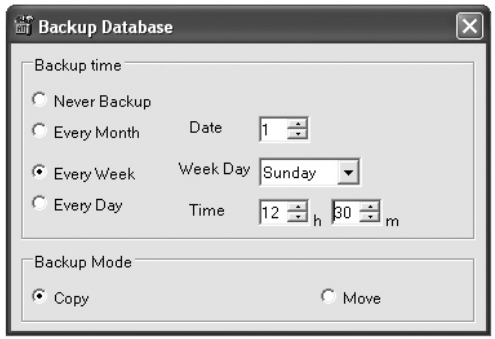


Click *Hide Tracking History In Map* to remove the track line from the map window.

Maintaining the History Database

For maintenance of the device status database and to increase accessing speed of the History log it is recommended to save and backup device status data periodically:

Click *Backup database* to open the maintenance manager.



Choose how to backup your vehicle status data.

Check *Never Backup* if you want to leave all data in the log window without backup.
Check *Every Month* and select a date if you want to backup your data on a monthly basis.
Check *Every Week* and choose a week day if you want to backup your data on a weekly basis.
Check *Every Day* and select a time if you want to backup your data on a daily basis.

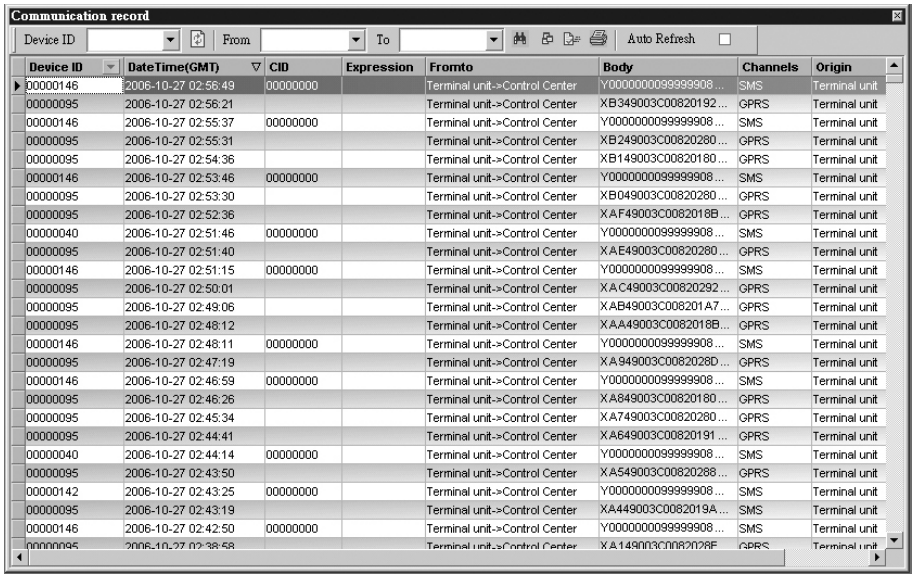
Choose between the backup modes.
***Copy* will save a copy of the data from the log to a file. You still will be able to view the complete history log from the History Panel.**
***Move* will clear the log from the History Panel and save it to a backup file. This option is recommended if your status database is accessed frequently and over long time periods.**

To load and view saved history logs from the database, click *Import Database*. Choose which status log you want to open from the backup file list.

Using the Communication Record

All communication details, inbound and outbound traffic between Control Base WorkStation and devices will be stored in the Communication Record database.
You are able to view or monitor all communication details as they appear, search and sort them according to parameters or print and export them to different file types.

From the application menu, select *View* and *Communication Record* to open the communication window.


Communication record
Device ID
From
To
Auto Refresh
Device ID
DateTime(GMT)
CID
Expression
Fromto
Body
Channels
Origin
00000146 2006-10-27 02:56:49 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:56:21 Terminal unit->Control Center XB349003C00820192... GPRS Terminal unit
00000146 2006-10-27 02:55:37 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:55:31 Terminal unit->Control Center XB249003C00820280... GPRS Terminal unit
00000095 2006-10-27 02:54:36 Terminal unit->Control Center XB149003C00820180... GPRS Terminal unit
00000146 2006-10-27 02:53:46 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:53:30 Terminal unit->Control Center XB049003C00820280... GPRS Terminal unit
00000095 2006-10-27 02:52:36 Terminal unit->Control Center XAF49003C0082018B... GPRS Terminal unit
00000040 2006-10-27 02:51:46 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:51:40 Terminal unit->Control Center XAE49003C00820280... GPRS Terminal unit
00000146 2006-10-27 02:51:15 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:50:01 Terminal unit->Control Center XAC49003C00820292... GPRS Terminal unit
00000095 2006-10-27 02:49:06 Terminal unit->Control Center XAB49003C008201A7... GPRS Terminal unit
00000095 2006-10-27 02:48:12 Terminal unit->Control Center XAA49003C0082018B... GPRS Terminal unit
00000146 2006-10-27 02:48:11 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:47:19 Terminal unit->Control Center XA949003C0082028D... GPRS Terminal unit
00000146 2006-10-27 02:46:59 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:46:26 Terminal unit->Control Center XA849003C00820180... GPRS Terminal unit
00000095 2006-10-27 02:45:34 Terminal unit->Control Center XA749003C00820280... GPRS Terminal unit
00000095 2006-10-27 02:44:41 Terminal unit->Control Center XA649003C00820191... GPRS Terminal unit
00000040 2006-10-27 02:44:14 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:43:50 Terminal unit->Control Center XA549003C00820288... GPRS Terminal unit
00000142 2006-10-27 02:43:25 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit
00000095 2006-10-27 02:43:19 Terminal unit->Control Center XA449003C0082019A... SMS Terminal unit
00000146 2006-10-27 02:42:50 00000000 Terminal unit->Control Center Y0000000099999908... SMS Terminal unit

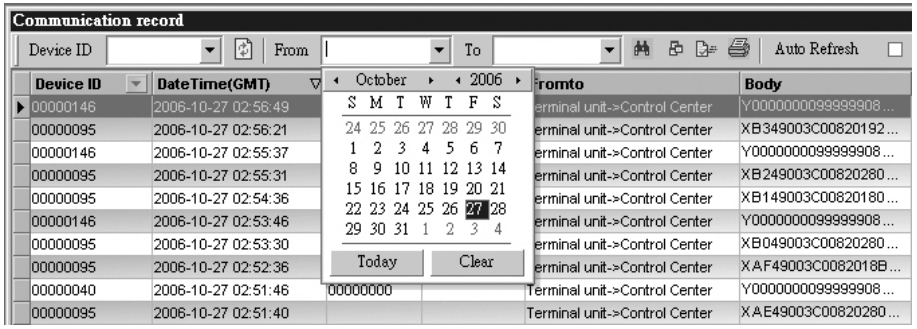
Communication entries include Device ID, Date/ Time (GMT) of occurrence, Command ID (CID), Events and Status (Expression), Sender and Recipient (From/to), complete message or packet text (Body), SMS or GPRS channels (Channels) and origin of the communication (Origin).

Click at the column headers in the table to sort alphabetically through the record. Click again to switch between ascending or descending order.

To view communication records for one particular device only, select the device ID from the drop-down menu *Device ID*.

Click *Refresh* to refresh the database with recent communication entries. You may also check the *Auto Refresh* option. If you want to have the table continuously updated while you are viewing (be aware that this option may effect your computer memory in case of high communication traffic).

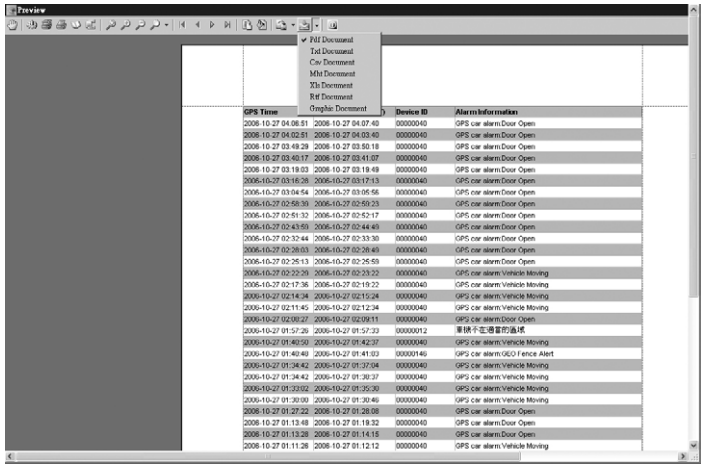
To view communication records between a certain time period, select a date from the *From* and *To* calendar options. Click the *Search* button to start the search.



To return to view all existing communication records, click *Show all records*.

To export the database to an HTML, XML or XLS file, click *Export*. Select a file type and location to save the Communication Record table.

To switch to print view in order to print or email the file, click *Print*.

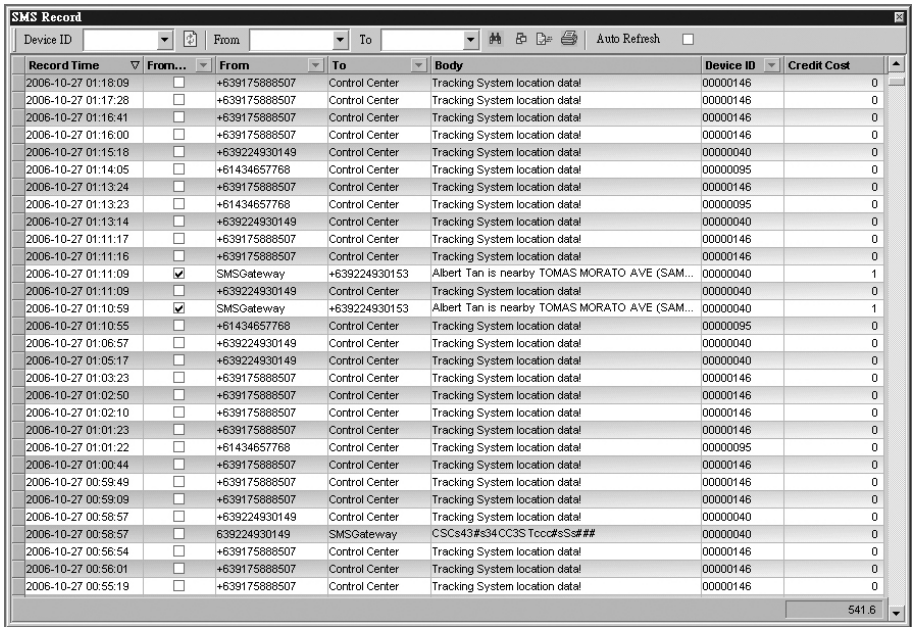


Check *Auto Refresh* if you wish to keep the table updated automatically while you are viewing it.

Using the SMS Record

All inbound and outbound SMS traffic at the Control Base WorkStation is stored in the SMS Record database.
You are able to view or monitor all SMS traffic as they appear, search and sort them according to parameters or print and export them to different file types.

From the application menu, select *View* and *SMS Record* to open the SMS Record window.



SMS entries include Date/ Time of occurrence (Record Time), indicator if an SMS Gateway or connected GSM modem is used (FromTo), Sender (From), Recipient (To), complete message text (Body), Device ID and message costs (Credit Cost).

Click at the column headers in the table to sort alphabetically through the record. Click again to switch between ascending or descending order.

To view SMS records for one particular device only, select the device ID from the drop-down menu *Device ID*.

Click *Refresh* to refresh the database with recent SMS entries. You may also check the *Auto Refresh* option. If you want to have the table continuously updated while you are viewing (be aware that this option may effect your computer memory in case of high communication traffic).

To view SMS records between a certain time period, select a date from the *From* and *To* calendar options. Click the *Search* button to start the search.
To return to view all existing SMS records, click *Show all records*.

To export the database to an HTML, XML or XLS file, click *Export*. Select a file type and location to save the SMS Record table.

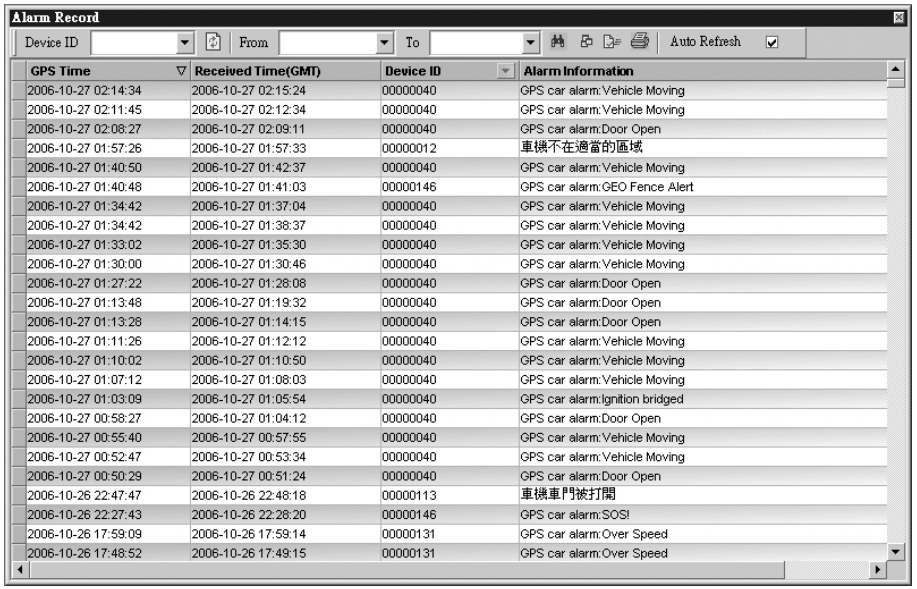
To switch to print view in order to print or email the file, click *Print*.

Check *Auto Refresh* if you wish to keep the table updated automatically while you are viewing it.

Using the Alarm Record

All incoming alarms from devices are stored in the Alarm Record database.
You are able to view all device alarms as they appear, search and sort them according to parameters or print and export them to different file types.

From the application menu, select *View* and *Alarm Record* to open the Alarm Record window.



Alarm entries include time of occurrence (GPS Time), actual time of receipt (Received Time GMT), Device ID and Alarm Information.

Click at the column headers in the table to sort alphabetically through the record. Click again to switch between ascending or descending order.

To view alarm records for one particular device only, select the device ID from the drop-down menu *Device ID*.

Click *Refresh* to refresh the database with recent communication entries. You may also check the *Auto Refresh* option. If you want to have the table continuously updated while you are viewing.

To view alarm records between a certain time period, select a date from the *From* and *To* calendar options. Click the *Search* button to start the search.
To return to view all existing alarm records, click *Show all records*.

To export the database to an HTML, XML or XLS file, click *Export*. Select a file type and location to save the Alarm Record table.

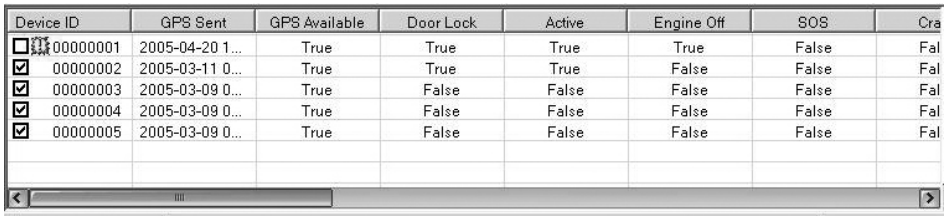
To switch to print view in order to print or email the file, click *Print*.

Check *Auto Refresh* if you wish to keep the table updated automatically while you are viewing it.

16. Accepting Events

The Device Status Log below the map window enables operators to view the current status and events for all devices from your database, select devices for viewing positions in the map, creating Geo-Fence areas or for use with Search from current position, and accept events reported from the devices.

Whenever a new event or activity is reported, the information of the relevant Device ID will be updated in both Device Status Log and History Log. To identify if events, like SOS emergency call or vehicle security violations, have been noted and accepted from operators at the Control Base WorkStation, an event notification icon will appear in the Device ID field and an alarm sound will be played.
As an operator, you will need to confirm every incoming event by clicking the check box left beside the icon, either from the Device Status Log or from the History Log. The icon will stop blinking and the alarm sound will be turned off. The log will record this acceptance as Event Completed in the History Log.

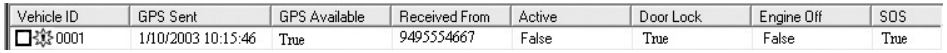


Device ID	GPS Sent	GPS Available	Door Lock	Active	Engine Off	SOS	Cra
00000001	2005-04-20 1...	True	True	True	True	False	Fal
00000002	2005-03-11 0...	True	True	True	False	False	Fal
00000003	2005-03-09 0...	True	False	False	False	False	Fal
00000004	2005-03-09 0...	True	False	False	False	False	Fal
00000005	2005-03-09 0...	True	False	False	False	False	Fal

SOS Emergency Alert

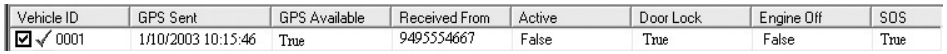
SOS Button has been pushed

If somebody pushes the SOS emergency button of a GPS device, the device will send an SOS alarm message to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.



Vehicle ID	GPS Sent	GPS Available	Received From	Active	Door Lock	Engine Off	SOS
0001	1/10/2003 10:15:46	True	9495554667	False	True	False	True

Confirm that you accepted the alarm by clicking the check box in the Device ID field.



Vehicle ID	GPS Sent	GPS Available	Received From	Active	Door Lock	Engine Off	SOS
0001	1/10/2003 10:15:46	True	9495554667	False	True	False	True

At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.
(NOTE: If configured, the device will then place a "silent phone call" to the Control Base WorkStation, allowing you to listen to all events and activities happening in the vehicle).

Geo-Fence Alert

Geo-Fence area has been violated

If a device is entering, leaving or crossing a predefined area that has been setup as Geo-Fence, the device will send a Geo-Fence alert to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.
At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

Speeding Alert

Maximum Speed Limit exceeded

If a device is exceeding the maximum speed limit configured earlier, the device will send a Speeding alert to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.
At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

Battery Low Alert

Low Battery Power

If the spare battery of a device is low, the device will send a Low Battery alert message to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.
At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

Vehicle Security Alerts (for AVL models only)

Door Is Opened with Security On

If the doors of a vehicle are opened with GPS vehicle security on, the device will send a Door Open alert to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.

At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

Vehicle Is Moving with Security On

If a vehicle is moving or being moved with GPS vehicle security on, the device will send a Car Moving alert to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.
At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

Crash Sensors Have Been Triggered

If a vehicle has been rammed or is involved in a car accident, the device will send a Crash alert to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.
At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

Main Power Has Been Cut Off

If the vehicle battery has been cut off or removed or reaches a critical battery power, the device will send a Car Moving alert to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.
At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

Ignition Line Has Been Bridged

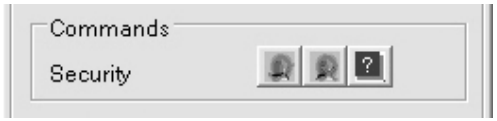
If the ignition line has been cut and the engine is started through bridging the wires, the device will send an Illegal ACC alert to the Control Base WorkStation. On the operator side, you will receive an event entry in the device status log, Alarm Record and History log.

Confirm that you accepted the alarm by clicking the check box in the Device ID field.
At the same time, your Control Base WorkStation will send an SMS text message to all Contact numbers from the User account.

17. Activate/ Disable Vehicle Security (AVL Models)

Operators at the Control Base WorkStation are able to remote activate and disable the GPS Vehicle Security of an AVL device.

From the Control Panel, select a vehicle from the *Device ID:* menu.



In the Security Commands, click the *Activate* button to activate Vehicle Security on the device.

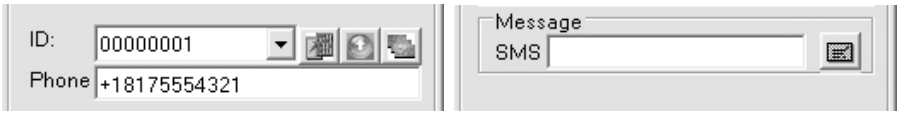
Click the *Disarm* command to disable Vehicle Security on the device.

Click *Query Last Status* to get location and information about the current status .

18. Using the SMS Editor

Operators can write and send SMS text messages on behalf of user accounts from the Tracking System WorkStation. SMS charges will be billed to the relevant user accounts of the device for which the text message has been sent.

From the Control Panel, select the device from the *Device ID* menu.
In the *Phone* field, enter the phone number to receive the SMS text message.



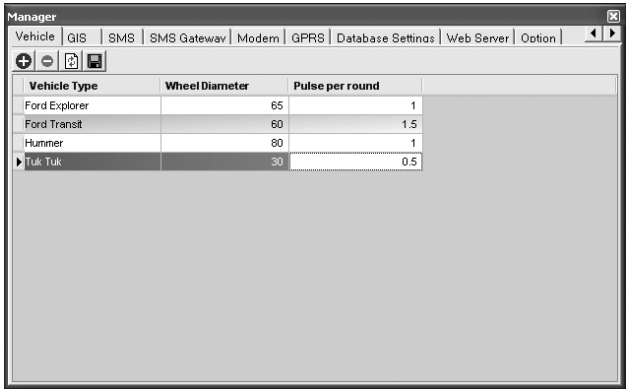
Create the text you want to send in the SMS editor window and click *Send Message* to send the message to the recipient.

19. Configuring the Vehicle Data Collector (ADC only)

If your device comes with ADC data collector module, operators can configure details, voltages and voltage alarms from the Control Base WorkStation.

In order to calculate travel distances and average speeds, you will need to create a vehicle database consisting wheel diameters and pulse per round.

From the Manager menu or application toolbar, open *Vehicle Manager* to access the vehicle database.

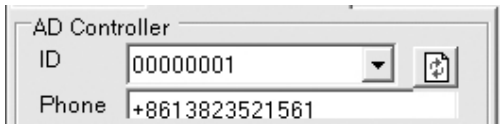


To add a new vehicle model to the database, click *Add New Type*.
Enter a vehicle model name in the Vehicle Type column.
Enter the wheel diameter in the Wheel Diameter column.
Enter the pulse count for every wheel turn into the Pulse per round column.

Click *Save* every time you created a new vehicle entry.

To delete a vehicle entry, select from the list and click *Delete Type*.
To refresh the database, click *Refresh*.

In order to connect the ADC module, define maximum and minimum voltage values for each analogue ADC input and configure voltage alarms, open the AD Controller Panel.

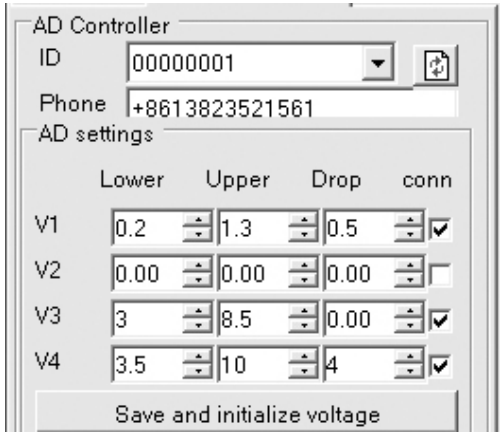


Select the vehicle ID for the device you want to configure. Click Refresh to update with latest

To establish a connection between VT-02 and ADC module, click *Start Communication*.
If you want to disconnect the ADC module, click *Stop Communication*.

Please note, if you remove the ADC module without stopping communication with the VT-02 device, you will receive alarm notices with ADC malfunctioning reports.
If connected, every incoming data from the VT-02 will include voltage readings, as well as alarm notifications.

For each analogue input to the ADC module you are able to define alarms in case of exceeding voltage maximums and minimums (Abnormal Voltage Alarm) and in case of sudden voltage drops (Irregular Voltage Alarm).

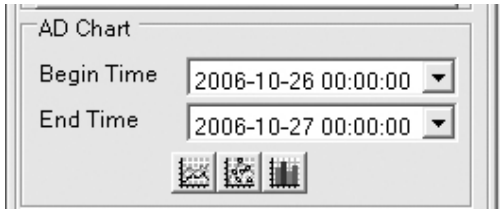


For V1 (Default Fuel voltage input), enter the voltage value for a full fuel tank into the *Lower* field.
Into the *Upper* field, enter the voltage value for a fully emptied fuel tank. Use a reasonable voltage drop per minute value for the case that the tank rapidly looses fuel.
Check *conn* to enable this Input.
The values you have entered as Upper and Lower voltages will be used to generate fuel level and consumption charts. The Drop value is needed to configure alarms in case fuel is stolen.

Configure other voltage inputs according to applicability.
If a voltage drops under the Lower value, a voltage alarm will be triggered and sent to all contact numbers.
If a voltage drop occurs over one minute exceeding the value you have entered, an Irregular Voltage Alarm will be triggered and sent to all contact numbers. Leave voltage drop at 0.00V if you do not wish to add a voltage drop alarm to this input.
Check *conn* to start voltage readings for this input.

Click *Save and initialize voltage* to send all configuration details to the ADC module.

To access speed and voltage reading charts, select a Begin Time and End Time for the period you wish to generate a chart.



Click *Speed/ Odometer chart* to view speed details and distance traveled over the selected period.

Click *Fuel Chart* to view a chart with fuel consumption indicators over the selected period.

Click *Current AD Status Chart* to view all current voltage readings, digital input signals and average speed.

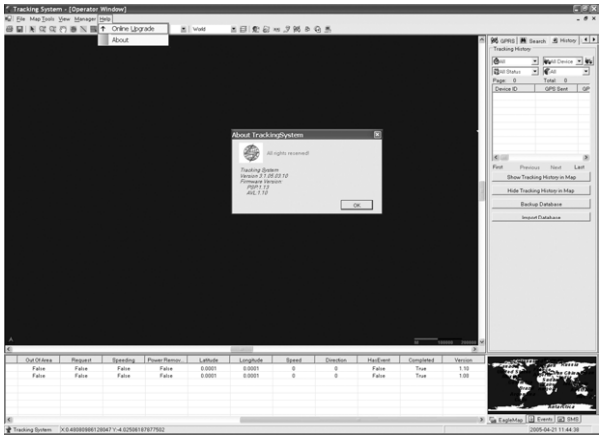
20. Online Software Updates and Upgrading Devices

From the Tracking System WorkStation you are able to receive software updates over Internet and new upgrade packages for GPS device firmware. Personal Tracker and Vehicle Units can be upgraded wireless over GPRS (GPRS connection from the devices required).

Download and Installation of Software Updates

To connect to our Online Upgrade WorkStation and receive software updates and new firmware packages for GPS devices, go to Help menu – Online Upgrade.

You will be asked to confirm that you want to shut down the program and start upgrading. Click *Yes* to proceed. The download and installation will begin shortly.



If Internet or WorkStation connection is not available at the time, a message box will appear:

If the download and installation of the software upgrade was successful, the Tracking System WorkStation program will start automatically.

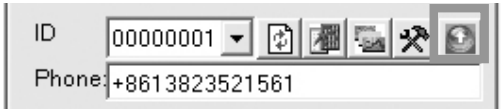
To know the current software version and check which firmware upgrade packages have been installed in your Tracking System WorkStation, go to Help menu – About.

Sending Firmware Upgrades to Devices

To know the firmware version installed in a device, check the *Version* entry in the Device Status Log or History Log:

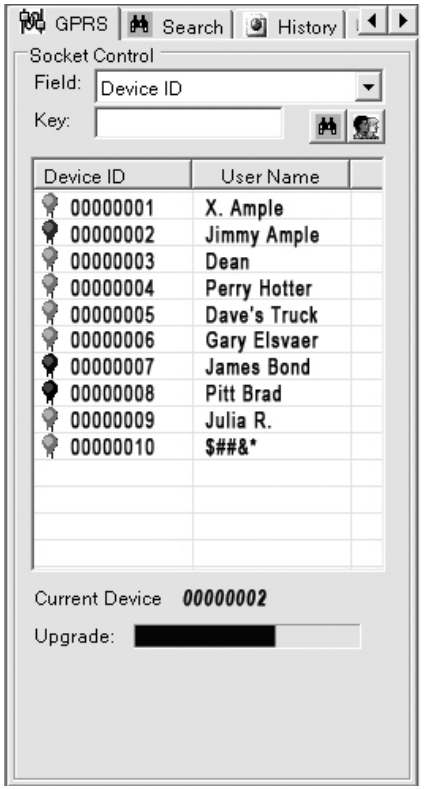
Request	Speeding	Power Remov...	Latitude	Longitude	Speed	Direction	HasEvent	Completed	Version
False	False	False	0.0001	0.0001	0	0	False	True	1.10

In the Control Panel, select the Device ID of the device you want to upgrade and click *Upgrade Device*. This will send an SMS command to the device to let it go GPRS online and prepare to receive the upgrade package.



NOTE: During the period of downloading and upgrading a device, all alarm functions and tracking features will be disabled. Upgrading a device might take 10 to 15 minutes. After completion, all original configurations will remain in the units (unless otherwise stated in the firmware release notes).
Vehicle Security and tracking schedules will also resume after completion and automatic restart of the units.

To check if the devices were successful connecting to the GPRS socket on the Control Base WorkStation and view the download progress, open the Online panel. Search and select the device to be upgraded and check if it is connected to the WorkStation. A yellow bulb in the Device ID field indicates that devices are connected. Click at the row to view the download progress in the status field below.



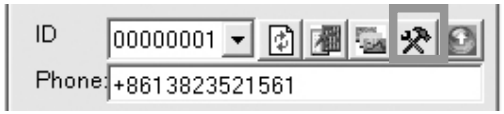
If the upgrade process has been interrupted or GPRS connection gets disconnected for any reason, the devices will restart and resume working with the original firmware version.
You are able to repeat the download process at any time.

To know if the upgrade has been successfully installed, you can send a *Get Location* or *Query Last Status* command from the Controller Panel.
After receiving any GPS or status data from the device, the Version field in the Device Status Log and History Log will show the new firmware version installed in the unit.

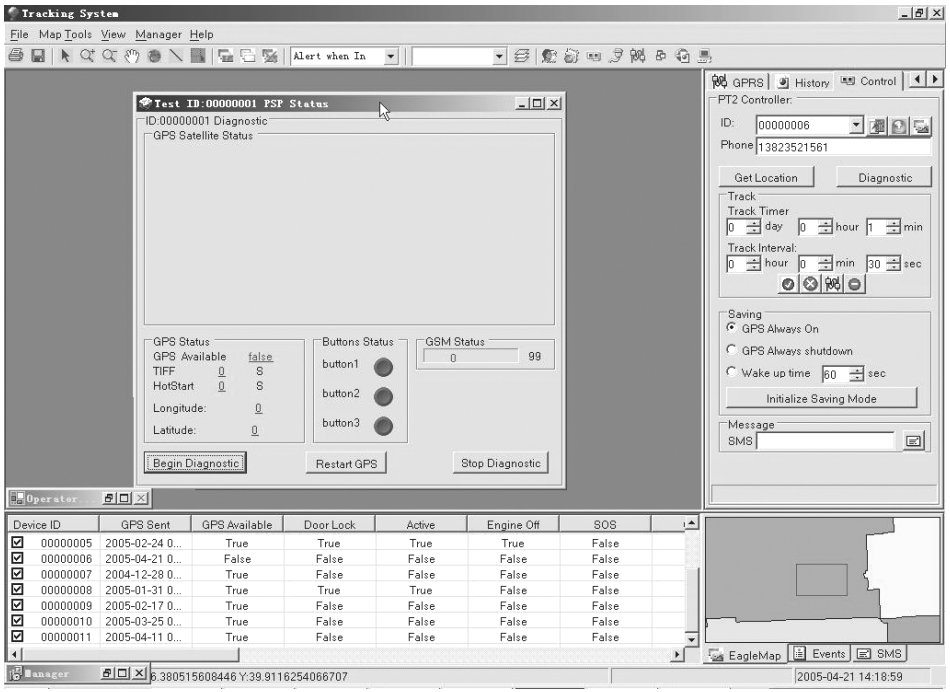
21. Testing Devices with the Diagnostic Program

Operators can run a diagnostic program for GPS devices from the Tracking System WorkStation, in order to monitor and evaluate GPS availability, GSM signal strength, Hot-start time to get GPS fix and check functionality of buttons on the device. All information will be received through GPRS connection from the devices (GPRS required)

In the Control panel, select the device from the Device ID menu you want to test and click *Diagnostic* to start the diagnostic program.

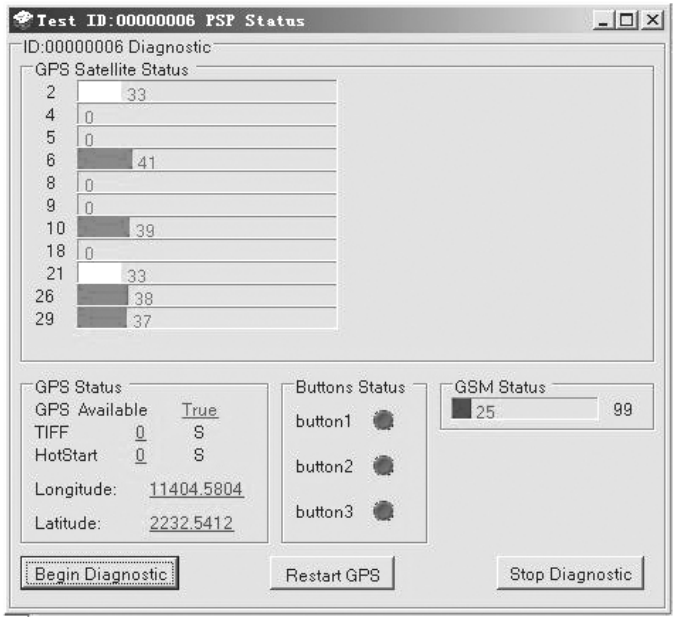


A new program window will be opened, with fields for GPS satellite information, GPS module status, GSM signal strength indicator and device function buttons.



Click *Begin Diagnostic* to send an SMS command to the device, in order to let it go GPRS online and switch to testing mode.

The diagnostic program will start showing all available satellites, GPS and GSM signal strength.
To test the Hot Start time of the GPS module in the device, click *Restart GPS*.



To stop the diagnostic program and let the device go offline, click *Stop Diagnostic*.